

IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

Year 2025 | Volume 13 | Supplement 1

ABSTRACT BOOKS

- Abstracts of the Student's Scientific Society of Tbilisi State Medical University.
- Abstracts of the 10th International Academic Medical Congress of Maranhão (X COIMAMA) 2025.
- Abstracts of the International Students' Congress of Bucharest (2024).
- Abstracts of the Medical Academical Conference of Piauí (COMAPI) 2023.

WCMSR ABSTRACTS

- Abstracts of the 2025 IJMS World Conference of Medical Student Research (WCMSR).



IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

International Journal of Medical Students

The International Journal of Medical Students (IJMS) is a peer-reviewed open-access journal (ISSN 2076-6327) created to share the scientific production and experiences of medical students and recently graduated physicians worldwide.

INTERNATIONAL JOURNAL OF MEDICAL STUDENTS

YEAR 2025 - VOLUME 13 – SUPPLEMENT 1

EXECUTIVE COMMITTEE

EDITOR IN CHIEF

Francisco Javier Bonilla-Escobar, MD, MSc, PhD
Universidad del Valle, Colombia. University of Pittsburgh, University of Colorado, USA

SCIENTIFIC EDITOR

Mihnea-Alexandru Găman, MD, PhD
"Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

DEPUTY EDITOR

Sajjad Ahmed Khan, MBBS
Birat Medical College Teaching Hospital, Nepal

EDITORIAL BOARD

Abdel Kareem Azab, PhD
University of Texas Southwestern Medical Center, TX, USA
Abdelrahman I. Abushouk, MD
Harvard Medical School, Boston, MA, USA
Abhishekh Hulegar Ashok, MD
Cambridge University Hospitals NHS Foundation Trust, UK
Adrian Baranchuk, MD, FACC, FRCPC
Queen's University, Kingston, ON, Canada
Amelia Maria Găman, MD, PhD
University of Medicine and Pharmacy of Craiova, Craiova, Romania
Americo Peña, MD
IRCCS San Raffaele Hospital, Milan, Italy

Atanas G. Atanasov, PhD
Polish Academy of Sciences, University of Vienna, Austria
Bogdan Socea, MD, PhD
"Carol Davila" University of Medicine and Pharmacy, Romania
Cain C. T. Clark, BSc, MSc, PhD
University Hospitals Coventry & Warwickshire, UK
Camelia C. Diaconu, MD, PhD
"Carol Davila" University of Medicine and Pharmacy, Romania
Eshetu Girma, MPH, PhD
African Population and Health Research Center, Kenya
Hemey A. García-Perdomo, MD, MSc, EdD, PhD, FACS
University of Valle, Cali, Colombia

Javad Sharifi-Rad, PhD
University of Azuay, Cuenca, Ecuador
Jorge E. Gomez-Marin, MD, MSc, PhD
University of Quindío, Armenia, Colombia
Juan C. Puyana, MD, FRCSC, FACS, FACCPC
University of Pittsburgh, Pittsburgh, PA, USA
Juliana Bonilla-Velez, MD
University of Washington, Seattle, WA, USA
Mark Zafereo, MD, FACS
MD Anderson Cancer Center, TX, USA
Matouš Hrdinka, MSc, PhD
University Hospital Ostrava, Ostrava, Czech Republic

Mhairi Copland, MD, PhD, FRCPC, FRCPath (UK), MRCP (UK)
University Hospital Ostrava, Ostrava, Czech Republic
Mohamed M. Gad, MD
Department of Internal Medicine, Cleveland Clinic, OH, USA
Paul MacDaragh Ryan, MD, BCh, PhD
Hospital for Sick Children, Toronto, Canada
Rahul Kashyap, MD, MBA, FCCM
WellSpan Health, York, PA, USA
Srinivas Vinod Saladi, MD
Massachusetts Eye and Ear Infirmary, Harvard Medical School, MA, USA
William C. Cho, PhD
Queen Elizabeth Hospital, Kowloon, Hong Kong, China

ASSOCIATE EDITORS

André Yvan Zolo Ossou, MD, MSc(c)
Global Surgery Division, University of Cape Town
Kyle T. Enriquez, MSc, MD/PhD (c)
Vanderbilt University, Nashville, USA
Marcarius Moorkereh Tantuoyir, BSc, MBBS
Tehran University of Medical Sciences, Iran

Mathew Mbwogge Ngime, MSc
NHS Clinical Leaders Network, UK
Mohamed Fahmy Doheim, MBBSCh(c)
Alexandria University, Alexandria, Egypt
Mohammad A. Khazeei Tabari, Medical student
Mazandaran University of Medical Sciences, Iran

Muili Abdul Basit, MBBS
Ladoke Akintola University of Technology (LAUTECH), Nigeria
Nguyen Tran Minh Duc, MD, PhD
University of Medicine and Pharmacy, Vietnam
Sohaib Haseeb, BSc, MD(c)
James Cook University, Queensland, Australia

Vincent Kipkorir, BSc(H)
University of Nairobi, Kenya

JUNIOR ASSOCIATE EDITORS

Alinawaz Khan, MD Student
Rajiv Gandhi University of Health Sciences, India
Amna Zaheer, MD Student
Liaquat National Hospital and Medical College, Pakistan
Anjali Mediboina, MBBS
Alluri Sitarama Raju Academy of Medical Sciences, India

Hamrish Kumar Rajakumar, MBBS
Government Medical College, Omandurar Government Estate, India
Lorraine Arabang Sebopelo, MD
University of Botswana, Faculty of Medicine, Gaborone, Botswana
Mauricio Alejandro Saldana Ruiz, MD
Hospital Universitario Dr. José Eleuterio González, Mexico

Praveen Bharath Saravanan, MBBS
K.A.P. Viswanatham Government Medical College, India
Shikhar Tripathi, MD, MBBS
Sir Ganga Ram Hospital in New Delhi, India.
Snigdha Sharma, MBBS
Mahatma Gandhi Institute of Medical Science, India

Stanley Chinedu Eneh, BSc(Hons), MPH, MSc
Obafemi Awolowo University in Ife-Ife, Nigeria
Sushil Dahal, MBBS
Kathmandu University Hospital, Nepal
Viviana Cortiana, MD Student
University of Bologna, Italy

STUDENT EDITORS

Aditi Saini, Max Healthcare and Pary Sound Friendship Center, USA
Aditya Ojha, KS Hegde Medical Academy, India
Adwath K. Surendran, Jawaharlal Institute of PME and Research, India
Agrima Kapoor, Dr. Rajendra Prasad Government Medical College, India
Ahmed Nahian, LECOM at Seton Hill, USA
Alex Mwangi Kihunyui, University of Nairobi, Kenya
Amal Essam Ali Ahmed, University of Khartoum, Sudan
Amara Kandimala, University of Nairobi, Kenya
Anuj Kumar, Government Medical College and Hospital Chandigarh, India
Arnab Kundu, R.G.Kar Medical College and Hospital, India
Arwa Nogdalla, Al-Neelain University, Sudan
Bairam Saieesh, Osmania Medical College, India
Carlo Cossa, Humanitas University, Italy
Chloe Carrington, University of Queensland-Ochsner, Australia
Christabel Uche-Oji, University of Ibadan, Nigeria
Chun-Yu Yueh, China Medical University, Taiwan

Dhiran Sivasubramanian, Children's Hospital of Philadelphia, USA
Elaine Liang, Kaiser Permanente School of Medicine, USA
Eleni Georgiadi, Atkinson University Hospital, Greece
Fatma Assad Alagelli, University of Tripoli, Libya
Hamid Mohiedin Mohamed, University of Khartoum, Sudan
Harisharan Seshadri, Madras Medical College, India
Ikshita Sabharwal, Government Medical College, India
Jana Badrani, University of Alabama at Birmingham, USA
Jochebed K. Suga, Myungsun Medical College, Ethiopia
Lance De Barry, University of Bedfordshire, UK
Lessa A. Mendez Lara, Universidad Veracruzana, Mexico
Lina Adver, University of Nebraska Medical Center, USA
Mahika Toprani, Pramukhswami Medical College, India
Mahmoud M. Morsy, ASIDE Healthcare, USA
Malaz M. Abdalmotalib, University of Khartoum, Sudan
Mallikarjuna S. Oruganti, Osmania Medical College, India

Manali Sarkar, Sir H. N. Reliance Foundation Hospital and RC, India
Manisha Das, Dhaka Medical College, Bangladesh
Manthan Dhingra, Dayanand Medical College and Hospital, India
Mansi Agrawal, Mahatma Gandhi Memorial Medical College, India
Marsha Zacharia, Sri Uthadom Thirunal Academy of Medical Sciences, India
Moaz Elsayed Abouelmagd, Cairo University, Egypt
Mohammed Shoyaib Khazi, All India Institute of Medical Sciences, India
Monica Karanth, Father Muller Medical College and Hospital, India
Natalie Kearn, Queen's University, Canada
Nathan Kinfe-michael Suga, Myungsun Medical College, Ethiopia
Niharika Singh, Maulana Azad Medical College, India
Okeke, Sophia Udochi, University of Ibadan, Nigeria
Oxiris Y. Garcia-Gonzalez, Monterrey Institute of Technology, Mexico
Pincheng Luo, University of Galway, Ireland
Preeti Chopra, Government Medical College, India
Rabia Bega, Ziauddin University, Karachi

Rahul K. Chaudhary, Birat Medical College Teaching Hospital, Nepal
Richard Christian Suteja, Udayana University, Indonesia
Rohan Singhal, ABVIMS and Dr. RML Hospital, India
Ruchil Saptarshi, Byramjee Jeejeebhoy Government Medical College, India
Sahasvay Adalarasan, Madras Medical College, India
Sameena Tabassum, All India Institute of Medicine and Science, India
Samia A. Ali, Charles R Drew University of Medicine and Science, USA
Sayan Sarkar, Maulana Azad Medical College, India
Shridevi Murugan, Government Tinseltown Medical College, India
Shristi Agarwal, BJ Medical College, India
Taha Kassim Dohadwala, David T. Widdan Medical University, Georgia
Tyler Hepler, Feinstein Institutes for Medical Research, Northwell Health, NY, USA
Yashwanth Yellanki, Shri B M Patil Medical College, India

JUNIOR STUDENT EDITORS

Aaref A. Ahmed Salim, University of Khartoum, Sudan
Abdullahi Auwalu, Federal University Dutse, Nigeria
Abhilash V. Kumar, Acharya Jagadish Chandra Bose Medical College, India
Adefunke Boluwatife Bolatito, University of Ibadan, Nigeria
Airo Emmanuel Nguka, Kenyatta University, Kenya
Akshai K., Trichy SRM Medical College, India
Alaa A. Elsaied Elhag, University of Khartoum, Sudan
Alexia-Darina Brutaru, "Carol Davila" University of Medicine and Pharmacy, Romania
Anmol Bhat, Goa Medical College and Hospital, India
Annabelle Assad, Saba University, Caribbean Netherlands
Antaraa Bhattacharya, Rajiv Gandhi Medical College, India
Anurenj S Kumar, Yerevan State Medical University, Armenia
Aravind M., India Institute of Medical Sciences, India
Arnav Ranjan, All India Institute of Medical Sciences, India
Arunagiri Gunasekar, Government Medical College and Hospital Thiruvananthapuram, India
Arya Moiz Jamali, GMERS Medical College, India
Arya Bhasini, Kalinga Institute of Medical Sciences, India
Aseel A. Ahmed Abdelhafiz, University of Khartoum, Sudan
Ashi Soni, Lady Hardinge Medical College, India
Atroba Zahereh, Tbilisi State Medical University, Georgia
Avelyn T. Kishore, J. J. Moore Medical College and Research Institute, India
Barah B. Ali Mohamed Ahmed, Elrazi University, Sudan
Bhaskar Kambhampati, Rangaraya Medical College, India
Bradley Nota, Kamuzu University of Health Science, Malawi
Brijpal Singh, Alte University, Georgia
Bridha Patel, University of Nairobi, Kenya
Camilla Weveti, University of Nairobi, Kenya
Caroline Gitonga, University of Nairobi, Kenya
Catherine L. Alexandra James, Imperial College Medical School, UK
Cathryn Persis, Sri Ramachandra Medical College and Research Institute, India
Chiagoziem Offiah, Nnamdi Azikiwe University, Nigeria
Darbar Shunab Bhupendra, University of Nairobi, Kenya
Dhananjay Konki, NTR University of Health Sciences, India
Dhvanit Rajdeep, Caucasus International University, Georgia
Dilip Kumar Chintarala, Guntur Medical College, India
Eleanor Roy, University of Nicosia, Cyprus

Faith Wanja Mwangi, University of Nairobi, Kenya
Fatima Nadeem, Jawaharlal Institute of Medical Sciences, India
Geethika Gummadi, Andhra Medical College, India
Hana Kabil, University of Queensland-Ochsner, Australia
Hana Sebesi, George Emil Palade University of Medicine, Romania
Haneen Badreldin Ali, Dubai Medical University, UAE
Hanna Tsehay Abebe, Hospital Millennium Medical College, Ethiopia
Hayat Abdoolah, University of Khartoum, Sudan
Helder Dias, Luis Razetti School of Medicine, Venezuela
Himanshu S. Jog, Ramaiah Medical College, India
Irene F. J. Christopher, Nicolae Testemitanu State University, Moldova
Isha Nagle, Mahatma Gandhi Mission's Institute of Health Sciences, India
Israa Mohamed, University of Gezira, Sudan
Jaimin Rathod, Teaching University of Geomeedi, Georgia
Jasir Shah, Maulana Azad Medical College
Kashish Akhtar, Dr. DY Patil Medical College, India
Khadija Khamis Ussi, Kairuki University, Tanzania
Khalid Bin Amir, Calcutta National Medical College, India
Kinnersa Lakshmi Dhanwada, Mysore Medical College, India
Krishna Giff, Nepal Medical Association, Nepal
Kristof-Gergo Nagy, George Emil Palade University of Medicine, Romania
Leela Lakshmi Sai Srinivas Parasa, Rangaraya Medical College, India
Lekhana Macharla, Rajiv Gandhi University of Health Sciences, India
Lilechi Priscilla, Kenyatta University, Kenya
Logeswari Sivakumar, Thanjavur Medical College, India
Maha Awan, Sulaiman Al Rajhi University
Maheen Sheraz, Continental Medical College, Pakistan
Mahika Toprani, Pramukhswami Medical College, India
Malaz Elbagir Elshaikh Mohamed, Bahra University, Pakistan
Mallika Mittal, Punjab Institute of Medical Sciences, India
Maliha Quadry, Dr. VRK Women's Medical College, India
Malika Mittal, Punjab Institute of Medical Sciences, India
Marco Castañón Gómez, Universidad Autónoma de Zacatecas, Mexico
Mariam Saeed Yassin Mohammed, Aswan University, Egypt
Maria Antonia Restrepo Duque, Universidad del Quindío
Mehwish Shoaib, Dhillip Nehru Medical College, India
Mihai-G. Zait, "Iuliu Hațieganu" University of Medicine and Pharmacy, Romania

Mirna Mustafa, Al Quds University, Palestine
Mohamed A. Elsaied Elhag, University of Khartoum, Sudan
Mohamed F. Sheikheldin Atta, Al-Neelain University, Sudan
Mohamed Yassine Touli, Mohammed VI Polytechnic University, Morocco
Mohammad Aquib, Kumod Medical College, India
Mohammad H. Bin Ozair, Kathar Medical College, India
Mohd Murtuza, Government Medical College, Suryapet, India
Mosaab Mohamed Elamahi, Chongqing Medical University, China
Moses H. Stefanus, Namibia University of Science and Technology, Namibia
Moses Njoroge Muchiri, University of Nairobi, Kenya
Muhammad Tayyab Ijaz, CMH Lahore Medical and Dental College, Pakistan
Namira Khan Khakwani, Shifa International Hospital, Pakistan
Nandakishore R., Madras Medical College, India
Naomi A. Frank-Opigo, Niger Delta University, Nigeria
Nour Abujayyab, University of the People, USA
Ojaswi Phal Desai, Maulana Azad Medical College, India
Olayiwola T. Ayomide, University of Ibadan, Nigeria
Om Pandey, Chirayu Medical College and Hospital, India
Omar S. Abdelfattah, Horus University, Egypt
Pankaj K Kotadia, Kilpauck Medical College, India
Pavan Raju Kotla, All India Institute of Medical Sciences, India
Penina Oswago, University of Nairobi, Kenya
Peterson Nganga, Moi University, Kenya
Prabhav Tekam, Government Medical College and Hospital Nagpur, India
Pranav Menon, Kerala University of Health Sciences, India
Prateek, All India Institute of Medical Sciences, India
Pratyush Karan, IPGME&R and SSKM Hospital, India
Priscilla Lilechi, Kenyatta University, Kenya
Priyanka Nayak, TMSS Medical College, Bangladesh
Radu Marinescu, "Carol Davila" University of Medicine and Pharmacy, Romania
Rashina Fernando, Grodno State Medical University, Belarus
Reinhard Kipkoeech, University of Nairobi, Kenya
Renusri Ede, Nairobi Medical College, India
Roshan Singh Rajput, Maulana Azad Medical College, India
Rutam Bhalendru Vaishnav, Pramukhswami Medical College, India
Ruth Tai, University of Nairobi, Kenya

Rymaz Osman, Sudan International University, Sudan
S Kishanth, Thanjavur Medical College, Thanjavur, Tamil Nadu, India
Sahil Aryal, B.P. Koirala Institute of Health Sciences, Nepal
Sai Lavanya Patnala, Apollo Institute of Medical Sciences and Research, India
Sakthimanasvini Siddhuraju, Koval Medical Center and Hospital, India
Sangram Vikram Joshi, Government Medical College and Hospital Chandrapur, India
Sanskriti Bhaumik, Lady Hardinge Medical College, India
Sara Malafa, University of Pisa, Italy
Sarvesh Zope, All India Institute of Medical Sciences, India
Sebastian Serna Rivera, University of Quindío, Colombia
Sebestyén-Dósa Réka, George Emil Palade University of Medicine, Romania
Sharvari Vikram Rishi, Goa Medical College and Hospital, India
Shella C. Luleka, St Francis University of Health and Allied Science, Tanzania
Shivani Patel, G.M.E.R.S. Medical College, India
Shourya Gandhi, Goa Medical College and Hospital, India
Shreya Prakash, Government Vellore Medical College, India
Shreya Ramchandani, Goa Medical College and Hospital, India
Shridevi Murugan, Government Tinseltown Medical College, India
Sohil Aryal, B.P. Koirala Institute of Health Sciences, Nepal
Sunusi Bala Musa, Bayero University Kano, Nigeria
Tabache Houada, Mohammed VI Polytechnic University, Morocco
Tanishaqa Sheth, KJ Somaya Medical College and Research Centre, India
Tathagata Jha, Medical College Kolkata, India
Tebyan A. Osman Suliman, Al-Neelain University, Sudan
Tejaswi Choppakatti, Siddhartha Medical College Vijayawada, India
Tovia Ubah, University of Nigeria Enugu Campus, Nigeria
Tukiya Mutwale, The University of Zambia, Zambia
Uashar Badakhshan, University of Exeter Medical School, UK
Uzoechoina Godswill Chidubem, University of Nigeria, Nigeria
W.F. Rashina Shanani, Grodno State Medical University, Belarus
Yuvraj Rananajay Singh, Rajiv Gandhi Medical College, India
Zahra Kothawala, BJ Medical College, India
Zainab Moiyadi, Bombay Hospital College of Nursing, India
Zarmina Ehtesham, Dow University of Health Sciences, Pakistan

ANCILLARY POSITIONS

IN HOUSE WRITERS

Laeqa S. Manji, China Medical University, China
Amy Phelan, University College Dublin, Ireland

EDITORIAL ASSISTANT MANAGERS

Daniela Collazos, Natalia Galindo.

PR & COMMUNICATIONS COMMITTEE

Brijpal Singh, Dilip Kumar, Sarvesh Zope

SOCIAL MEDIA MANAGERS

[LINKEDIN](#): Ahmed Nahian.

PARTNERS

ASCEMCO, Colombian Association of Medical Students' Scientific Societies, Colombia
COIMAMA, International Academic Medical Congress of Maranhão, Brazil
COMAPI, Academic Medical Congress of Piaui, Brazil

COMAU, Congress of Medical Students of Unicamp, Brazil
CSurgeries, USA

IMSCB, International Medical Students' Congress of Bucharest, Romania
SaMED, International Medical Students' Congress Sarajevo



INTERNATIONAL JOURNAL *of* MEDICAL STUDENTS

The *International Journal of Medical Students* (IJMS) is an open-access, peer-reviewed scientific journal (ISSN [2076-6327](#)) that publishes original research in all fields of medicine. The Journal was created in 2009 to share the scientific production and experiences of medical students (*i.e.*, MBBS students, MD students, DO students, MD/MSc students, MD/PhD students, etc.) and recently graduated physicians (<3 years into practice) from all over the world. Our objective is to be the primary diffusion platform for early-career scientists, using standards that follow the process of scientific publication.

The *IJMS* receives submissions where there is at least one author enrolled as a medical student in any medical school in the world or a recently graduated physician worldwide. For research articles, early-career scientists must be accompanied by a senior researcher that must be also responsible for the research, guaranteeing the quality of the work. We publish Original Articles, Short Communications, Reviews, Case Reports, Interviews, Experiences, and Letters, which follow an [innovative and unique two-step, double-masked peer-review process](#), in brief:

The first step of revisions is carried out by two Student Editors (medical students with publications indexed in the US National Library of Medicine (NLM) with the supervision of an Associate Editor. The aim of this step is to improve the quality of articles and identify those that can proceed to external peer-reviews. The second step of revisions is carried out by external peer-reviewers who are researchers with publications indexed in the NLM related to the topic of the submission.

The time between submission and final publication in most cases has been two to four months depending on the diligence of Peer-Reviewers and Authors.

The *International Journal of Medical Students* is published online quarterly (March, June, October, December) by the [University of Pittsburgh Library System](#), a member of the [Open Access Scholarly Publishers Association](#), as part of its Pitt Open Library Publishing imprint.

The journal main office is located in the United States of America (USA). Any publication, dissemination or distribution of the information included in the Journal is permitted if the source is cited (*Int J Med Stud*).

The *International Journal of Medical Students* is indexed or abstracted in: Bielefeld Academic Search Engine (BASE), Dialnet Foundation (Dialnet), Directory of Open Access Journals (DOAJ), Directory of Research Journals Indexing, Elektronische Zeitschriftenbibliothek (EZB), e-Revistas, Geneva Foundation for Medical Education and Research, Google Scholar, Health InterNetwork (HINARI), Journal Seek Database, List of Publications that follow the International Committee of Medical Journal Editors (ICMJE), Mexican Index of LatinAmerican Biomedical Journals (IMBIOMED), NewJour, Open Academic Journals Index (OAJI), Online Computer Library Center (OCLC) WorldCat, Pubshub, Research Bible, Rubriq, SHERPA/RoMEO, Scientific Indexing Services (SIS), The e-Journal Gateway (J Gate), The Open Access Digital Library, Ulrich's International Periodical Directory/Summon by Serial Solutions.

The *IJMS* acceptance rate in 2022 was 27.5% of the almost 502 submissions. Published articles in 2022 came from 34 different countries. The average days to a first decision is 4 days, 117 for acceptance, and 10 days to decline a submission. The time between submission and final publication in most cases has been three to four months depending on the diligence of Peer-Reviewers and Authors.

The journal's website got over 269 thousand visits only in 2022. The *IJMS*'s reach includes a growing social media presence (more than 20,000 followers on [Twitter](#), [Facebook](#), [Instagram](#), [YouTube](#), and [LinkedIn](#)). Only in the last year, the Journal has been visited from nearly every place in the world (+190 countries). You can find more of the *IJMS* [statistics here](#).

The Journal and the Editorial Board are not responsible for the opinions expressed by the Authors of all materials published, nor do these represent the Official Policy or medical opinion of the Journal or the institutions with which they are affiliated unless otherwise stated.

Open Access Policy

This journal provides immediate open access to its content. Our publisher, the University Library System at the University of Pittsburgh, abides by the Budapest Open Access Initiative definition of Open Access to open access to peer-reviewed research literature as "(...) free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

Furthermore, we encourage authors to post their pre-publication manuscript in institutional repositories or on their websites prior to and during the submission process, and to post the Publisher's final formatted PDF version after publication. These practices benefit authors with productive exchanges as well as earlier and greater citation of published work.

There are no article processing charges, submissions fees, or any other costs required of authors to submit, review or publish articles in the IJMS.

Peer Review Process

All papers submitted to the International Journal of Medical Students will undergo a two steps peer-reviewers process. The first step of revisions is carried by two anonymous Student Editors who will work together with one Associate Editor. In the second step, the manuscript will be reviewed by two anonymous reviewers (Editorial Board members, Associate Editors and/or invited reviewers with expertise in the subject matter). Authors will remain anonymous to all the referees.

The *IJMS* review process guarantees and supports the quality and validity of the work published at the *IJMS*. Reviewers are given three weeks to complete their tasks.

Reviewers and editors are obliged to retain the contents as privileged and confidential until publication. The Editor in Chief and the Editorial Board will have final authority over an article's suitability for publication.

The *IJMS* also strive towards the training of a new generation of Editors and Peer-reviewers promoting different training strategies among our Editorial Team that includes the [Web of Science Academy courses](#) and the [Committee on Publication Ethics \(COPE\)](#) courses available to its members (*IJMS* is a member of COPE).

Archiving

This journal utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and restoration.

License



New articles in this journal are licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Editorial Office:

1400 Locust Street
Suite 3103
Pittsburgh, PA 15219.
United States of America (USA)
Tel.: 413-232-7884
Fax: 412-232-8966

All full-text articles are available at: www.ijms.info
e-ISSN 2076-6327 (Online)

The *International Journal of Medical Students* is licensed under a *Creative Commons Attribution 4.0 International License*.
Issued in Pittsburgh, PA, USA.

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Table of Contents

Abstract Books

	Page
Abstracts of the Student's Scientific Society of Tbilisi State Medical University	S14
Abstracts of the 10th International Academic Medical Congress of Maranhão (X COIMAMA) 2025	S28
Abstracts of the International Students' Congress of Bucharest (2024)	S101
Abstracts of the Medical Academical Conferece of Piauí (COMAPI) 2023	S151

WCMSR Abstracts

Ease of Nasogastric Intubation using a Frozen Nasogastric Tube by a Novice Intern in Anaesthetized, Intubated Adult Patients. A Randomized, Controlled Parallel Assignment Study	S175
Evaluation of Anxiolytic Effect of Pantoprazole on Swiss Albino Mice – An Experimental Study	S176
Assessing the Precision of AI-Generated Medical Answers: An Evaluation of LLaMA-3 Powered Meta AI	S177
National Trends Reveal Hypertension as the Dominant Driver of Cardiovascular Readmissions	S178
Sleep Solutions or Sleepless Nights? Adverse Events in Mandibular Adjustment Devices and Hypoglossal Nerve Stimulator Treatment of Obstructive Sleep Apnea	S179
Exploring Careers in Healthcare & Onward (ECHO): A Community Outreach Program to Promote Healthcare Career Interest in K-8 Students Surrounding the CU Anschutz Medical Campus	S180
Sleep Quality in First- to Third-Year Medical Students at Universidad de San Carlos de Guatemala: Prevalence and Associations with Daytime Sleepiness and Perceived Stress	S181
Mobile Phone Use and Hand Grip and Pinch Strength in the SCAMP Study	S182
Cognitive Impairment and Its Influencing Factors Among Elderly at Residential Homes in Western Tamil Nadu -A Cross-sectional Study	S183
Association Between Diabetes Mellitus and Intraoperative Awareness During General Anesthesia: A Retrospective Cohort Study	S184
The Effects of Community-Based Mental Health Interventions on Resettled Adult Refugees from Muslim-Majority Countries	S185

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Emotional and Psychological Dependence of Medical Students on Artificial Intelligence Chatbots: A Cross-Sectional Study	S186
Vagus Nerve Neuropathy in SARS-CoV-2 Infection: An Ultrasound Study	S187
Occupational Exposure to Blood / Body Fluid and Anxiety Among Final-Year Medical Students: The Result of the Curricular Gaps in Medical Education	S188
Evaluation of HMBG1 serum levels and its involvement in depressive symptoms in Obstructive Sleep Apnea Patients (OSA)	S189
Characterisation of Morphological Changes and Retinal Decay in a Retinal Degeneration Murine Model of Retinitis Pigmentosa	S190
Handgrip Strength Asymmetry in Middle-aged and Older Adults: Clinical Aspects	S191
From Observation to Participation: Gender Differences and Surgical Exposure among Medical Students	S192
The Antimicrobial Resistance Awareness and Antibiotic Prescribing Behavior Among Healthcare Workers	S193
Publication Rate of Students and Graduates of the Program of Combined Studies in Medicine (PECEM), an MD/PhD Program of Mexico	S194
The Intersection of Rheumatology and Cardiology: Cardiac Disease in Rheumatic Disorders within Palestinian patients between 2022-2024, A Retrospective Cohort Study	S195
Effectiveness of Haptic Feedback Devices in Reducing Pain Perception During Intra-Articular Corticosteroid Injections in Rural Guatemala and Kenya – A Randomized Controlled Trial	S196
Effectiveness of Trimethoprim-Sulfamethoxazole in Cyclosporiasis: A Meta-analysis of Randomized Clinical Trials	S197
Amyloidosis – A Rare Complication of Long-Evolving Rheumatoid Arthritis. A Case Report	S198
Left Colo-renal Fistula in an Elderly Female: Case Report	S199
Primary Intestinal Lymphangiectasia Presenting as Chylous Ascites in a Young Female: A Rare Case	S200
A Case of Rosai-Dorfman Disease	S201
One Step Forward, Two Steps Back: Functional Decline following Lisfranc Fracture-Dislocation	S202
Aggressive Gallbladder Carcinoma in Down Syndrome Patient: A Rare Presentation	S203
Avoiding Pacemaker: Resolution of Sinus Node Dysfunction through CPAP Therapy	S204

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Silent Splenic Crisis in an Immunocompetent Adolescent: A Case Report of Multifocal Splenic Abscess with Subcapsular Extension and Paradoxical Leukopenia Managed Conservatively	S205
Subcutaneous Panniculitis-like T-cell Non-Hodgkin Lymphoma Associated with Cushing Syndrome: An Introspection	S206
Opportunities for Climate-Sensitive Work in the Health Sector - Kenya and Germany in Focus	S207
Near-Peer Teaching of Laparoscopic Skills among Medical Students – A Randomized Feasibility Study	S208
Managing Hyperphagia, Obesity, and Hyperglycemia in Prader-Willi Syndrome: A Meta-Analysis of GLP-1 Agonists and SGLT2 Inhibitors	S209
What Medical Students Can Learn from the 2024 Dengue Outbreak in Pakistan: Clinical Spectrum, Biochemical Abnormalities and Predictors of Severity	S210
Risk of Recurrence of Congenital Ocular Toxoplasmosis in Children: A Meta-Analysis Review of Studies With Long-Term Clinical Follow-up	S211
Aging Patients, Changing Substances: Unexpected Demographic Shifts in Turkey's Drug Treatment Admissions Over a Decade	S212
Cross Sectional Study on Air Pollution and its Influence on Health Related Quality of Life in Coimbatore	S213
MALAT1 and MIAT as Emerging Biomarkers for Diabetic Retinopathy: A Systematic Review and Meta-Analysis	S214
Health Anxiety Among Clinical Medical Students: A Cross-Sectional Study at Uludağ University Faculty of Medicine	S215
Association Between the Presence of Palmaris Longus Muscle and Handwriting Performance in Medical Students: A Cross-Sectional Study	S216
Survival Factors in Lung Cancer Patients with Mutations in the PROS1, SERPINC1, F2, and F5 Genes	S217
Leishmaniasis in a Patient with Congenital Neutropenia - A Rare Case Report	S218
Diabetic Striatopathy: A Forgotten Diagnosis in Clinical Neurology	S219
Efficacy of Narrowband UVB Phototherapy in Mild to Moderate Psoriasis: A Case Series from Kharkiv, Ukraine	S220
Reconstruction of a Large Lumbar Carcinoma Defect Using a Subtype III Keystone Flap: Case Report	S221
The Lipid Paradox in 5,060 Hospitalized Patients: An Inverse Association Between C-Reactive Protein and Cholesterol in a Tertiary Care Cohort from 2020 to 2024	S222
Is Mental Health Contagious? Depression, Anxiety, Stress and Burnout among Mental health professionals in Sudan	S223

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Healthcare Access Dimensions among ESRD Patients on Dialysis in Northern Sudan during Wartime 2024	S224
Malnutrition among Patients with End-Stage Renal Disease in War 2024: The Role of Healthcare Access, Dialysis, Gender, and Economic Disparities	S225
Cross-Sectional Descriptive Study of Comparative Accuracy of ChatGPT, Google Gemini, And Microsoft Copilot in Solving NEET PG Medical Entrance Test	S226
Enhancing wash Practices and Health Outcomes in a Remote Community in the Peruvian Amazon: a Community-Based Intervention	S227
Human Immunodeficiency Virus Infection Among Women with Cervical Cancer: A Cross-Sectional Study	S228
Exploring the Relationship Between Students' Academic Performance and Jungian Psychological Types: A Correlational Study	S229
Prevalence of Anxiety Among Medical Students in River Nile Universities: A Cross-Sectional Study	S230
The Impact of Lifestyle on Cardiovascular Health Among Medical Students at 6 October University	S231
Emotional Well-Being, Anxiety, Depression, and Burnout Among First-Year Hospital Medical Students in Guatemala: A Pilot Study	S232
Assessment Of Vision Impairments Among Licensed Drivers In Mathura: A Pilot Study	S233
Factors Influencing Varicose Vein Amongst the Local Population of Namakkal - A Cross-Sectional Study	S234
Knowledge, Attitude, and Practice on Over-the-Counter Drugs among Medical Students University of Khartoum, 2022-2023	S235
Students' Perspectives on the Educational Environment at the University of Khartoum, Faculty of Medicine (2023-2024)	S236
Myeloid-Derived Suppressor Cells in HIV: A Marker Beyond CD4 Count?	S237
Early Clues, Early Cure: Evaluating the Utility of the Hematological Scoring System in the Early Diagnosis of Neonatal Sepsis.	S238
Perceived Knowledge, Perception and Readiness of University Students regarding Sustainability Education and Practice	S239
A Cross Sectional Study On Prevalence Of Insomnia And Factors Contributing To Insomnia In Adolescent School Students	S240
Impact of War on Burnout among Medical Students at Al-Neelain University in Sudan, 2024	S241
Ochratoxin A and Citrinin Contamination in Rice, Oats and Wheat Flour in Michoacán, Mexico: an External Biomonitoring Study	S242

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Green Synthesis of Streptomycin-Conjugated Silver Nanoparticles and their Efficacy Against Multi Drug-Resistant Staphylococcus aureus	S243
Modulatory Role of Pre-orthostatic Cold-Water Ingestions on the Electroencephalogram	S244
Effects of Non-Nutritive Sweetener Mixers compared to Carbohydrate Mixers on Alcohol Pharmacokinetics and Patient-Reported Outcomes: A Systematic Review and Meta-Analysis	S245
Evaluating SLC11A2 Expression in Stage III Colon Adenocarcinoma: No Prognostic Signal but Coordinated Expression with SLC40A1	S246
Using pretreatment MRI perfusion to inform subsequent MRI perfusion	S247
How is Hypertension Associated with the Risk of Dementia among Adults living in High-Income Countries: A Systematic Literature Review	S248
Prevalence and prognostic significance of sodium levels in adults with traumatic brain injury: A meta-analysis	S249
Polypharmacy and Outcomes in Elderly Patients with Heart Failure: A Meta-Analysis	S250
Meta Analytic Review on The Effect of Repetitive Transcranial Magnetic Stimulation on Post-COVID 19 Memory Impairment and Related Cognitive Disorders	S251
Ekterly (Sebetralstat): A First in Class Oral On Demand Treatment for Hereditary Angioedema	S252
The Impact Of Nightshifts On Doctors' Cognitive Performance At Kosti Teaching Hospital During War, Sudan, 2024	S253
Psychiatric Comorbidities and Mortality After Heart Failure Hospitalization: Evidence of a Survival Paradox From a Nationwide Cohort	S254
Cardiovascular Readmissions After Heart Failure: Substance Use Disorder as a Potential Risk Factor Among Psychiatric Comorbidities	S255
Tuberculous Aortitis Masquerading as Takayasu Arteritis: A Diagnostic Tightrope in a TB-Endemic Region	S256
Pregnancy Outcomes Following Elective Fetal Reduction from Dichorionic Twins to Singleton: Analysis of 30 Consecutive Cases Performed at 11-14 Weeks	S257
Successful Microsurgical Replantation After Multiple Traumatic Amputations Caused by an Electric Grinder: A Case Report	S258
Challenging the Paradigm: Emphysematous Pyelonephritis in a Culture-Negative, Non-Diabetic Patient	S259
Early Recognition of Eosinophilic Granulomatosis with Polyangiitis (Churg-Strauss Syndrome): a Case Report of Successful Diagnosis and Treatment	S260
Bilateral Fasciocutaneous V-Y Advancement Flaps for Reconstruction of a Stage IV Sacral Pressure Injury in a Burn Patient: A Case Report and Literature Review	S261

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

Reversible Hypocalcaemic Dilated Cardiomyopathy causing Decompensated Heart Failure- A Case Report	S262
When Antibiotics Leave a Mark: Understanding Minocycline-Related Pigmentation	S263
Beyond Genetics: Clinico-Pathological Recognition of Ullrich Muscular Dystrophy in a Resource-Limited Setting	S264
Circulating Tumor DNA as a Tool of Surveillance and Early Indicator of Relapse in Sarcoma Patients	S265
From Thirst to Hormonal Collapse: A Case of Pituitary Stalk Enlargement Presenting with Central Diabetes Insipidus and Panhypopituitarism	S266
Kratom Chaos: Tracing the Medical and Societal Toll of Kratom Use in Kentucky	S267
Subacute Sclerosing Panencephalitis Presenting as a Stroke Mimic: A Case Report	S268
From Anatomy to Intervention: Coil Embolization of a Post-Cholecystectomy Hepatic Artery Pseudo aneurysm: A Case Report and Anatomical Insights for Medical Student	S269
Genetically Confirmed Schwartz–Jampel Syndrome: An Ultra-Rare Case of Congenital Myotonia with Osteochondrodysplasia from India	S270
Critical Role of Multiplex PCR in Diagnosing Legionella–SARS-CoV-2 Co-infection in a Severely Immunosuppressed Pregnant Patient: A Case Report	S271
Pituitary Carcinoma with Secondary Intracranial Involvement: A Case Report	S272
The Lupus You Didn't See Coming: Secondary Evans Syndrome with Fulminant Autoimmune Myocarditis in a Young Woman	S273
An Uncommon Presentation of Systemic Sclerosis with Pulmonary Hypertension: A Case Report	S274
Cat Scratch Disease in a Low-Prevalence Region: A Case Report from Bangladesh	S275
A Diagnostic Gray Zone: Isolated Left Oculomotor Nerve Palsy in the Setting of Hyperhomocysteinemia, Sphenoid Sinusitis, and Rathke's Cleft Cyst	S276
Acute Myeloid Leukemia in A Young Adult: Diagnostic Insights from a Case Report	S277
Guillain–Barré Syndrome in the Setting of Acute Biliary Pancreatitis: A Rare Clinical Association	S278
Diagnostic Challenges in Maxillary Telangiectatic Osteosarcoma: A Rare Case	S279
Surviving The Odds: A Rare Case of Untreated Transposition Of The Great Arteries In Adulthood With Neurological Manifestations	S280
Giant Left Diaphragmatic Hernia Complicated With Intrathoracic Gastric Volvulus and Total Gastric Necrosis: An Uncommon Case Report	S281

International Journal of Medical Students

Year 2025 • Volume 13 • Supplement 1

Int J Med Stud. 2025; 13(Suppl 1)

The Hidden Rhythm: A Rare Case of Isoarrhythmic Sick Sinus Syndrome Defying Chronotropic Expectations	S282
When RASopathies Collide: A Case Highlighting the Continuum between Noonan and LEOPARD Syndromes	S283
Management Challenges Encountered in a Borderline Personality Disorder with Multiple Somatic Diagnosis: A Case Report	S284
Atypical presentation of a hypopharyngeal leiomyoma: Case Report	S285
When Bone Forms in the Endometrium: A Case of Osseous Metaplasia Presenting with Chronic Pelvic Pain and Abnormal Uterine Bleeding	S286
Early Detection of alpha-synuclein deposition within Two Years Diagnosis of REM Sleep Behavior Disorder and Consequential Prevention of Parkinson's	S287

ABSTRACTS OF THE
STUDENT'S SCIENTIFIC
SOCIETY OF TBILISI
STATE MEDICAL
UNIVERSITY

IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

Organizational Committee**Hosting Organization****Students' Scientific Society (SSS)***Tbilisi State Medical University*

The conference was organized and hosted by the Ivane Tarkhnishvili **Students' Scientific Society** of Tbilisi State Medical University. The event brought together students and academic staff from across the Faculties of the Medicine and Health Sciences.

Academic Advisors

We express our sincere gratitude to the **Academic Advisors**, the Deans of the participating faculties, for their ongoing support, guidance, and encouragement during the planning and execution of this conference.

A special note of thanks to Professor Sophio Bakhtadze, Vice Rector of Tbilisi State Medical University, for their support and involvement.

Academic Advisors (Faculty Deans):

- Professor Tinatin Tkemaladze, MD, PhD – Faculty of Medicine
- Professor Nana Kipiani – Faculty of Stomatology
- Professor Shalva Zarnadze – Faculty of Public Health
- Professor Lela Maskhulia – Faculty of Physical Medicine and Rehabilitation
- Assistant Professor Medea Jgharkava – Coordinator of the Nursing and Midwifery Bachelor Programs

Student Editorial Team

The abstract book was prepared by the Student Editorial Team of the Students' Scientific Society at Tbilisi State Medical University. The team coordinated submission review, formatting, and final compilation. Temporary student editors from each faculty also contributed during the editing process. Some team members are also authors in this volume. All editorial decisions were made impartially and in accordance with academic standards.

Editorial Team Members:

- Nutsa Khuskivadze
- Nino Dilsiz
- Nana Jikia
- Nino Chkhetiani
- Sofo Goglidze
-

Table of Contents

ORAL SESSION

Original Research and Structured Student Reviews

OS 01. Iron deficiency anemia in pregnancy in Georgia; modern approaches to treatment and prevention	03
OS 02. IL-6 Dynamics and Cardiac Arrhythmias in Hospitalized Georgian patients with COVID-19: A Retrospective Cohort Study.....	04
OS 03. Statistical Distribution of GERD Spectrum Diagnoses in Georgia: A Prospective Study	04
OS 04. Barriers to Prenatal Care Access in Semi-Urban Settlements of Georgia: A Descriptive Cross-Sectional Pilot Study.....	05
OS 05. Exploring the Relationship Between Students' Academic Performance and Jungian Psychological Types: A Correlational Study.....	05
OS 06. Problem of Hypodynamia Among Modern University Students.....	06

Descriptive Case-Based Studies

OS 01. Youth Health Risks and Assessment of Medical Services: A Case Study of TSMU Students	06
OS 02. Spontaneous Hemoperitoneum Secondary to a Rare Ovarian Neoplasm in a Postmenopausal Woman: A Case Report.....	07

Literature Reviews

OS 01. Antimicrobial Resistance in Cystic Fibrosis-Associated Infections: A Narrative Review.....	07
OS 02. The Influence of the Musculoskeletal System on the Development of Malocclusion: A Literature Review.....	08
OS 03. The Ozaki Procedure in Valve Surgery – A Literature Review.....	08
OS 04. From Sequencing To Survival: The emerging role of cancer vaccines in personalized therapy – A Literature Review	09
OS 05. Exploring the Therapeutic Capabilities of Quantum Dots in Neurodegenerative Diseases: A Structured Review using Systematic Methods.....	09
OS 06. NEUROLOGICAL DEGENERATION IN THE CONTEXT OF SARS-COV-2 and VACCINATION	10
OS 07. Approaches to Oncological Rehabilitation After Mastectomy for Breast Cancer and Strategies for Managing Lymphedema Problem of Hypodynamia Among Modern University Students.....	10
OS 08. Ergonomics in Nursing: Narrative Review	11
OS 09. The Review of the Impact of Toxic and Narcotic Drugs on Human Health	11
OS 10. The Problem of Microplastics in Environmental Medicine (Literature Review)	12
OS 11. Does Gut Microbiome Dysbiosis Contribute to the Early Onset of Type 1 Diabetes Mellitus in Children? A systematic review.	12
OS 12. Biofilm-Inspired Encapsulation of Beta Cells: A Literature Review on a Novel Strategy for Immune Protection in Type 1 Diabetes.....	13

Oral Presentation Session

ORIGINAL RESEARCH & STRUCTURED STUDENT
REVIEWS

All studies in this section were conducted by student researchers under faculty supervision.

01. Iron deficiency anemia in pregnancy in Georgia; modern approaches to treatment and prevention

Nita Verulava¹ Ketevan Abesadze¹

Tengiz Verulava²

¹ Faculty of Medicine, Tbilisi State Medical University

² Doctor of medical sciences

Introduction: Iron deficiency anemia (IDA) is a major global health issue affecting pregnant women, particularly in developing countries, including Georgia. According to statistical data, 20–39% of pregnant women in Georgia suffer from IDA, a rate significantly higher than that reported in many European countries. Although the country has implemented national programs—such as free iron supplementation and relevant clinical protocols—the prevalence of IDA remains high. This ongoing challenge is largely due to the low level of awareness among pregnant women, limited informational support, and insufficient involvement of the primary healthcare system.

Objectives: This study aims to analyze the contributing factors to IDA prevalence, as well as the modern approaches to its diagnosis and treatment in Georgia. **Methods:** This paper is based on a multi-source narrative review, incorporating both qualitative and quantitative studies conducted in Georgia and internationally. Data collection was carried out using the following scientific databases: PubMed, Scopus, ScienceDirect, and Google Scholar. Additional informational sources included publications and reports from the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the National Center for Disease Control and

Public Health of Georgia (NCDC Georgia). The selection strategy was guided by the thematic relevance, reliability, publication date, and target population (pregnant women) of the materials found in the selected scientific databases and reports from the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the National Center for Disease Control and Public Health of Georgia (NCDC Georgia). The selection strategy was guided by the thematic relevance, reliability, publication date, and target population (pregnant women) of the materials found in the selected scientific databases. Non-peer-reviewed and duplicate sources, as well as studies that did not focus on pregnant women as the target group, were excluded from the review. **Results:** The high prevalence of IDA among pregnant women are driven by multifactorial causes. Key contributing factors include low socioeconomic status, short intervals between pregnancies, multiple gestations, limited education, and a skeptical attitude toward iron supplementation. A particularly critical issue is the lack of routine ferritin level screening, which hinders early diagnosis of iron deficiency. **Discussion:** Despite the existence of national programs, IDA continues to pose a significant challenge to Georgia's healthcare system, suggesting a need to reassess the effectiveness of current strategies. Evidence indicates the necessity of promoting early diagnosis of iron deficiency in clinical practice, enhancing public awareness campaigns, standardizing counseling procedures, and ensuring consistent involvement of family physicians. National food and nutrition policies, along with postpartum preventive strategies, also play a vital role. **Conclusion:** Improving the prevention and management of iron deficiency anemia in Georgia requires an integrated, evidence-based, and patient-centered approach. It is recommended to introduce mandatory ferritin screening, as well as to strengthen the role of family medicine as the first line of prevention, screening, and education. In addition, the development of educational and social strategies is essential to support the long-term improvement of maternal and neonatal health outcomes.

02. IL-6 Dynamics and Cardiac Arrhythmias in Hospitalized Georgian patients with COVID-19: A Retrospective Cohort StudyNutsa Khuskivadze¹ Giorgi Tcholadze²¹ Faculty of Medicine, Tbilisi State Medical University² MD, PhD, Cardiologist; Head of Cardiology Department, Clinic Neolab

Introduction: Cardiac arrhythmias are common complications in patients hospitalized with COVID-19, contributing significantly to morbidity and mortality during the acute phase. Post-acute COVID-19 syndrome is linked to long-term cardiovascular complications, including persistent atrial fibrillation (AF) and atrial flutter. Elevated levels of Interleukin-6 have been implicated in COVID-19 severity and cardiovascular complications. **Objectives:** The objective of this study was to examine the relationship between IL-6 level fluctuations, clinical severity, and the occurrence of new-onset arrhythmias in patients hospitalized with COVID-19. **Methods:** This retrospective cohort study in 2023 at Chapidze Heart Hospital included 100 patients (aged 40–80) with RT-PCR-confirmed COVID-19 and cardiovascular disease, grouped by AF status. Disease severity was assessed by clinical symptoms, respiratory rate, oxygen saturation, and CT findings. IL-6 was measured via electrochemiluminescence immunoassay at admission, within the first week, and before discharge. Additional labs included CRP, ferritin, and D-dimer. Arrhythmia persistence was evaluated at follow-up. Statistical analyses included repeated-measures ANOVA for IL-6 trends and logistic regression to identify arrhythmia predictors. **Results:** Among 100 patients, new-onset arrhythmias occurred in 23% of patients, most commonly AF, supraventricular tachycardia, and premature ventricular contractions. Among these, 78% exhibited persistent arrhythmias at short-term follow-up, and 56% continued to report arrhythmic symptoms or confirmed arrhythmias after one year. IL-6 levels were significantly elevated in patients with arrhythmias ($P = 0.024$), reflecting stronger inflammatory response. Independent predictors of arrhythmia included older age ($OR = 1.13$, $p = 0.002$), diabetes mellitus ($OR = 7.99$, $p = 0.008$), prolonged hospitalization ($OR = 1.17$, $p = 0.018$), and pre-existing heart disease ($OR = 5.93$, $p = 0.003$). **Conclusion:** New-onset and persistent arrhythmias are common post-COVID complications, particularly among patients with cardiometabolic comorbidities. These findings highlight the need for long-term cardiovascular monitoring to enable early detection and management of arrhythmic complications.

03. Statistical Distribution of GERD Spectrum Diagnoses in Georgia: A Prospective StudyNino Dilsiz¹ Mate Solomonias¹ Mariami Sirbiladze¹Giga Sordia², Zviad Gagua³¹ Faculty of Medicine, Tbilisi State Medical University² The First University Clinic of Tbilisi State Medical University, Gastroenterologist; Assistant-Professor of the Department of General Therapy TSMU;³ The First University Clinic of Tbilisi State Medical University, Surgeon-Endoscopist;

Introduction: Gastroesophageal reflux disease (GERD) is a prevalent condition in modern healthcare. Despite its clinical and public health significance, comprehensive local epidemiological data remains limited in many settings. Thus, the lack of methodical and structured evidence regarding this issue in countries like Georgia raises further difficulties in creating epidemiological statistics. **Objectives:** This study aims to create statistical records of GERD in Georgian patients and point out further gaps in local epidemiological data. **Methods:** We designed a prospective study and gathered consultation records, endoscopy images and biopsy results of the patients who reported to the First University Clinic of Tbilisi State Medical University (TSMU) from March 2025 to June 2025. The statistical analysis was used to assess the prevalence of GERD subtypes (NERD, ERD) and Barrett's esophagus. We analyzed the correlation among GERD, Hiatal Hernia (HH), gastritis and duodenitis using Fisher's Exact Test and Chi-square tests with a 95% confidence interval (CI). Additionally, a systematic review was conducted following PRISMA guidelines. PubMed, Scopus and Web of Science databases were searched and based on inclusion and exclusion criteria key data were systematically collected and examined. **Results:** GERD is highly prevalent ($>51\%$) in Georgian patient pool along with strong correlation with HH ($p < 0.001$). Our calculations yielded positive correlation with duodenitis and negative correlation with gastritis, however, results were not statistically significant due to the sample size being a limiting factor. **Conclusion:** Further studies with larger and more diverse populations would help validate these findings with more precise results and refine official statistical data.

04. Barriers to Prenatal Care Access in Semi-Urban Settlements of Georgia: A Descriptive Cross-Sectional Pilot Study

Ivliane Surmava¹, Irina Zarnadze² Lia Gumbaridze²

¹ Faculty of Medicine, Tbilisi State Medical University

² Tbilisi State Medical University, Department of Public Health Management, Policy and Economics, Associate Professor;

Introduction: Antenatal care (ANC) remains a major public health concern in many developing countries, including Georgia. Inadequate or delayed care has been linked to increased risks of maternal and neonatal mortality, preterm birth, and low birth weight. Despite national efforts to enhance maternal health, women in Georgia's small urban areas still face notable barriers—limited infrastructure, shortage of specialists, and restricted access to essential prenatal services. **Objectives:** The observational, cross-sectional pilot study aimed to assess the accessibility of prenatal care services and to identify the main structural and informational barriers experienced by pregnant women residing in semi-urban municipalities of Georgia. **Methods:** The study was conducted from March to May 2025 in eight semi-urban municipalities across Georgia. A total of 50 pregnant women were selected using systematic random sampling with a fixed interval method. Inclusion criteria included being currently pregnant and residing in one of the target municipalities. The study focused on access to basic services (e.g., ultrasound, lab testing, consultations), availability of medical specialists (e.g., gynecologists, radiologists, and family physicians) and awareness of government-funded ANC programs. Informed consent was obtained from all participants. **Results:** Most participants (72%) lacked access to basic laboratory tests and standard prenatal ultrasounds in their municipalities. Over half (56%) reported that specialized gynecological care was unavailable locally. Furthermore, 62% were not adequately informed about state-funded prenatal programs, including scheduled check-ups and diagnostic services. These shortcomings were mainly attributed to insufficient communication from healthcare professionals and a lack of community-level health education. being a limiting factor. **Conclusion:** The study indicates significant gaps in prenatal care in Georgia's small urban settlements. Improving infrastructure, providing qualified healthcare professionals and increased public awareness are essential to addressing these barriers.

05. Exploring the Relationship Between Students' Academic Performance and Jungian Psychological Types: A Correlational Study

Lizi Sarjveladze¹, Giorgi Geleishvili²

¹ Faculty of Medicine, Tbilisi State Medical University

² Assistant Professor, Psychiatrist, Tbilisi State Medical University, Tbilisi, Georgia,

Introduction: The aim of this study is to explore the potential relationship between students' academic performance and their psychological types, as defined by Carl Jung's theory. The study also aims to highlight the relevance of Jung's theory of psychological types in understanding individual differences in academic performance. **Objectives:** The key question is whether a person's psychological type influences their learning process, goal setting, and achievement. **Methods:** For theoretical information C. G. JUNG "THE COLLECTED WORKS" Edited by Sir Herbert Read was used. 50 students participated in the correlation study based on informed consent. The inclusion criteria are people with active student status aged 18 to 24 years. Questionnaires were used to collect data. The Myers-Briggs Type Indicator (MBTI) was used to determine the psychological types. SPSS Statistics Program was used to process the data. Four major variables were identified: 1. Gender, 2. University (Tbilisi State Medical University or other), 3. Psychological types, 4. Academic performance for the last 2 semesters (A, B, C, D). A correlation analysis was performed between these variables to determine the Pearson Correlation coefficient. **Results:** As a result of the pilot study the correlation between academic performance with student's psychological type was not confirmed (Pearson Correlation -.132). Given the small cohort, the results cannot be generalized of the general population. **Conclusion:** Aforementioned pilot correlation research shows that a person's professional success, academic performance and the scale of the use of knowledge is not dependent on the psychological type. This calls for further studies with bigger and more diverse cohorts.

06. Problem of Hypodynamia Among Modern University StudentsTinatin Ghambashidze¹, Ana Toria¹ Lali Bakradze²¹ Faculty of Public Health, Tbilisi State Medical University.² Associate Professor at Faculty of Public Health, Tbilisi State Medical University

Introduction: Hypodynamia, defined as a significant reduction in physical activity, is a growing health concern, especially among youth. It contributes to increased risks of cardiovascular diseases, obesity, diabetes, and certain cancers. Since young adulthood period is critical for establishing lifelong health behaviors, addressing hypodynamia in university students is essential. **Objectives:** This study aims to raise awareness about hypodynamia among university students and promote physical activity to prevent associated diseases. **Methods:** A quantitative cross-sectional survey was conducted among 40 students aged 18 to 25 from various faculties at Tbilisi State Medical University. The questionnaire included 21 structured items assessing physical activity levels and attitudes. **Results:** Half of the respondents reported engaging in less than 30 minutes of physical activity daily. The primary motivator for minimal activity was body shape and weight control. Despite 90% awareness of health risks associated with hypodynamia, inactivity and unhealthy lifestyle habits were prevalent. **Conclusion:** A sedentary lifestyle is widespread among university students, and awareness alone does not translate into behavior change. Effective interventions should focus on eliminating unhealthy habits and fostering sustainable healthy lifestyles.

**Oral Presentation Session
DESCRIPTIVE CASE-BASED STUDIES**

All studies in this section were conducted by student researchers under faculty supervision.

01. Youth Health Risks and Assessment of Medical Services: A Case Study of TSMU StudentsMariam Chokheli¹¹Public Health Bachelor's Program,
Tbilisi State Medical University

Introduction: In modern reality, the risks arising from an unhealthy lifestyle have a serious impact on the health of young people. This circumstance necessitates the timely identification of risks and the development of medical services tailored to young people. **Objectives:** The purpose of the study is to precisely study the health risks of young people and to assess how effectively the existing medical services in Georgia responds to their needs. **Methods:** The study was conducted using a cross-sectional quantitative research method, within the framework of which data were collected using a closed-ended questionnaire. The target group of the study was 75 Georgian and Indian students of Tbilisi State Medical University, who were selected using a simple random sampling method. The obtained data were processed using standard statistical methods of quantitative analysis. **Results:** The results of the study showed that 59% of Georgian students and 21.4% of Indian students do not use a student health insurance card. As a result of the survey of Georgian students, it was determined that in the field of medical services, the issue of financing needs to be improved first, then the qualification of medical personnel, access to medical services and finally timeliness. In the case of Indian students, we got the opposite results. **Discussion:** Based on the data obtained, we can assume that the reason for the low rate of use of student health insurance cards by Georgian students is the problem of financial accessibility. Perhaps this is why improving the financing of medical services was considered a priority. As for the spread of harmful habits among respondents, the percentage of which is approximately 35%, indicates the need to strengthen preventive and educational programs. **Conclusion:** The study highlights critical disparities in the utilization and perception of medical services among Georgian and Indian students. Financial accessibility appears to be a significant barrier for Georgian students, impacting their use of available health resources. The findings emphasize the need for improved funding mechanisms, enhanced provider competence, and greater accessibility and timeliness in student health services.

02. Spontaneous Hemoperitoneum Secondary to a Rare Ovarian Neoplasm in a Postmenopausal Woman: A Case Report

Angela Thomas¹, Ranasinghe Arachchige Dona Kashmira Nawodi Weerasekara¹, Maia Rizhvadze²

¹ Faculty of Medicine, EUMD, Tbilisi State Medical University, Tbilisi, Georgia.

² Department of Obstetrics & Gynecology, Tbilisi State Medical University, Tbilisi, Georgia.

Introduction: Ovarian tumors vary from asymptomatic to life-threatening. Rapidly growing adnexal mass with systemic symptoms in postmenopausal women need urgent evaluation due to high malignancy risk. Among rare histological variations, ovarian giant cell tumours are aggressive with unclear histology. Immunohistochemical profiling is crucial for accurate diagnosis. Literature reports remain scarce. **Case Presentation:** The patient presented with increasing back pain, lower abdomen discomfort, weakness, and a pulling sensation, low-grade fever, and minor bloody vaginal discharge. History included uterine fibroids, hypertension, and menopause at age 50. Physical examination revealed peritoneal signs, abdominal distension and positive Shchetkin-Blumberg sign. Imaging revealed bilateral ovarian tumours, including a 27x26 cm right-sided lesion, and an enlarged uterus. Histopathology highlighted malignancy with atypical mitoses, haemorrhage, necrosis, and osteoclasts-like giant cells. Vimentin positivity suggested a mesenchymal origin, CD68 positivity in large cells, high Ki67 indicated aggressive behaviour, and partial muscle differentiation was demonstrated by focal Desmin expression on immunohistochemistry. The tumor's rarity was increased by the lack of mucinous components. **Results:** Around 1 litre of haemorrhagic fluid was observed intraoperatively, with active bleeding and necrotic infiltration involving bladder wall, loops of large intestine, lateral peritoneal walls, and omentum. Limited excision was done due to bleeding risk, inaccessible lymph nodes, and poor visualisation. Unfortunately, the patient died six months later. **Conclusion:** This case highlights the rare and aggressive nature of giant cell ovarian tumors. Given their rapid progression and diagnostic complexity, early recognition, precise histopathological evaluation, and timely intervention are crucial, although prognosis maybe poor in advanced cases.

Oral Presentation Session**LITERATURE REVIEWS****01. Antimicrobial Resistance in Cystic Fibrosis-Associated Infections: A Narrative Review**

Bachana Aptsiauri¹

¹ Faculty of Medicine, Tbilisi State Medical University, Tbilisi, Georgia.

Introduction: Cystic fibrosis (CF) is an inherited condition that has a life-shortening impact and is characterized by the secretion of dense and sticky mucus, which elevates the likelihood of persistent respiratory infections in affected individuals. Recently, the emergence of antimicrobial resistance (AMR) has become a significant challenge in the treatment of CF, diminishing the effectiveness of standard antibiotics and making clinical management more difficult. Infections caused by resistant bacterial pathogens are significant contributors to adverse health outcomes, highlighting the pressing need for updated understanding and focused strategies. **Objectives:** The purpose of this literature review is to summarize the existing evidence regarding bacterial respiratory infections in CF and to emphasize how spread of AMR, creating considerable challenges for effective treatment. **Methods:** A thorough literature review was undertaken, focusing on articles published in peer-reviewed journals over the last 15 years. The databases searched included PubMed, Scopus, and Web of Science, with keywords such as: "Cystic fibrosis", "Bacterial infection", and "antimicrobial resistance". Studies concentrating on CF-related bacterial pathogens and patterns of AMR were included, also studies which involved humans and were published in English, while Articles unrelated to CF or AMR, non-English publications, and studies lacking primary data were excluded. **Results:** The bacterial pathogens most commonly found in CF include *Pseudomonas aeruginosa*, *Staphylococcus aureus* (including MRSA), *Burkholderia cepacia* complex, and *Achromobacter* species. **Conclusion:** AMR in infections associated with CF continues to be a significant clinical issue. Continuous monitoring, novel therapies, and prudent antibiotic use are crucial for enhancing long-term outcomes for patients with CF.

02. The Influence of the Musculoskeletal System on the Development of Malocclusion: A Literature ReviewMariam Utmelidze¹, Natia Natsvlashvili²¹ Faculty of Dentistry, Tbilisi State Medical University² Visiting Lecturer, Department of Orthodontics, Tbilisi State Medical University

Introduction: Malocclusion affects facial appearance, function, and health. Musculoskeletal disorders like spinal deformities and flatfoot can cause postural changes that may influence jaw development and occlusion. **Objectives:** This literature review aims to explore the relationship between musculoskeletal postural disorders, particularly spinal deformities (lordosis, kyphosis, Text Neck Syndrome) and flatfoot, and the development of dentofacial anomalies, specifically Angle Class II and III malocclusions. **Methods:** The review analyzed clinical and experimental studies focusing on the correlation between body posture and mandibular position, based on the kinetic chain theory. This systematic literature review followed PRISMA guidelines. Sources were retrieved from PubMed, Scopus, Web of Science, and Google Scholar. Eligibility was based on thematic relevance, full-text availability, and clinical data. Narrative reviews without original data, non-professional sources, and irrelevant studies were omitted. Data was processed manually through thematic analysis. **Results:** The analysis revealed that deviations in postural alignment, such as anterior head posture or spinal imbalance, can alter mandibular positioning and occlusal relationships. These findings support a biomechanical association between musculoskeletal dysfunctions and the emergence of orthodontic anomalies.

03. The Ozaki Procedure in Valve Surgery – A Literature ReviewMariam Gagniashvili¹, Gugua Khetaguri²¹ Faculty of Medicine, Tbilisi State Medical University² Invited Lecturer, Department of Pharmacology, Tbilisi State Medical University

Introduction: The Ozaki procedure represents a modern approach to aortic valve reconstruction that reduces the need for artificial prostheses by utilizing the patient's own autologous pericardium. **Objectives:** This paper aims to evaluate the advantages of the Ozaki procedure compared to artificial valves based on clinical and hemodynamic parameters. **Methods:** This work is a descriptive literature review based on an analysis of articles published between 2018 and 2023 in the PubMed and ScienceDirect databases, providing a broad and reliable data set regarding the implementation of the Ozaki procedure. The reviewed studies include clinical records, surgical case reports, and systematic reviews. Inclusion criteria encompassed only articles reporting the use of the Ozaki procedure in human subjects. A total of 32 articles were identified, of which 15 met the inclusion criteria. The primary evaluation criteria included hemodynamic parameters, complication rates, and postoperative valve function. Data analysis was conducted using descriptive statistics, with appropriate statistical tests applied when comparing data sets. **Results:** According to data from 12 studies included in the literature review, the Ozaki procedure is characterized by a significant reduction in transvalvular pressure and improvement in hemodynamic parameters during the postoperative period. Various studies reported a mean postoperative transvalvular gradient reduced to approximately 8.5 ± 2.1 mmHg, which is considerably lower than the 15–20 mmHg registered in patients with mechanical valves. The procedure is applied for degenerative valve pathology as well as for rheumatic and infectious endocarditis cases, demonstrating hemodynamic stability and relatively long durability. **Conclusion:** The Ozaki procedure represents a physiologically tailored alternative to artificial valves, distinguished by biocompatibility and customization according to individual anatomy. Available data suggests improved clinical outcomes, which is particularly important for younger patients. Wider clinical implementation in Georgia requires additional research and increased awareness.

04. FROM SEQUENCING TO SURVIVAL: THE EMERGING ROLE OF CANCER VACCINES IN PERSONALIZED THERAPY - A LITERATURE REVIEW.

Nikoloz Kajaia¹, Vakhtang Kakhiani¹, Khatuna Rekhviashvili^{2,3}

¹ Faculty of Medicine, Tbilisi State Medical University.

^{2,3} PhD, Chief Researcher, Head of the Laboratory of Molecular Medicine, Institute of Biotechnology, Tbilisi State Medical University.

Introduction: mRNA and dendritic cell (DC) vaccines are emerging as promising methods of personalized immunotherapy. They are still in clinical trials and yet to be implemented on a broader scale, despite the FDA approval of Sipuleucel-T (Provenge) (Kantoff Philip W. et al., n.d.), a DC vaccine. **Methods:** This review was conducted using sources from PubMed and Google Scholar. The included articles were published from 2020 onward, all of them focused either on mRNA or DC vaccines within the context of cancer immunotherapy. Articles that supported their findings with large-scale, randomized clinical trials were included and smaller-scale trials were excluded. **Results:** Throughout our research, we found multiple personalized cancer vaccines increasing distant metastasis-free (DMFS), recurrence-free survival (RFS) and overall survival (OS). KEYNOTE-942 trial on mRNA-4157 in resected melanoma patients (Weber et al., 2024) showed a 44% reduction in the risk of recurrence or death compared to pembrolizumab monotherapy, with Grade ≥ 3 related adverse events only manifesting in 25% of patients. DCVax-L in glioblastoma multiforme (Liau et al., 2023) doubled the 5-year survival rate, from 5.7% to 13% and a median overall survival increase from 16.5 months with standard chemotherapy to 19.3 months with DCVax-L. Grade ≥ 3 adverse events manifested in less than 3% of administered doses. **Conclusion:** Both vaccine types show promise and impressive results in clinical trials, however a running theme persists: mRNA vaccines are used in early-stage cancers, in combination with first-line agents and DC vaccines are typically reserved for late-stage, advanced and aggressive cancers.

05. Exploring the Therapeutic Capabilities of Quantum Dots in Neurodegenerative Diseases: A Structured Review using Systematic Methods

Hassan Khalid¹,

¹ Faculty of Medicine, Tbilisi State Medical University.

Introduction: Quantum dots (QDs) are modifiable nanocrystals with size-dependent fluorescence. Due to nanoscale size and modifiable surface properties, QDs can efficiently traverse the blood-brain barrier, making them promising candidates for targeted drug delivery and diagnostic imaging in neurological disorders. **Objectives:** To assess the therapeutic and diagnostic potential of quantum dots in the treatment and management of neurodegenerative diseases. **Methods:** Studies were identified through reputable electronic databases (PubMed, The Lancet, RSC Publishing, ACS Publications) using predefined keywords: "graphene quantum dots", "Alzheimer's", "selenium quantum dots", "neurodegenerative disease". In vivo and in vitro studies were included, in English, from 2015-2025. Non-English, evidence lacking, and opinion-based papers were excluded. Risk of bias assessment was performed using the ROBINS-I V2 tool. The study implementing graphene QDs was judged to have a low risk of bias. However, only the abstract was assessed in the selenium study resulting in an incomplete assessment with a low to moderate risk of bias. **Results:** In a 2025 study, graphene quantum dots (GQDs) exhibited attenuation of the amyotrophic lateral sclerosis (ALS) phenotype in animal models by inhibiting the formation of pathogenic amyloid fibrils. TDP-43 peptide NMR spectroscopy revealed ~20% signal intensity reduction upon the addition of GQDs. Similarly, a 2021 study reported the therapeutic potential of selenium QDs (SeQDs) in Alzheimer's disease (AD). SeQDs were shown to effectively inhibit the pathologic aggregation that leads to AD cascades, and their intrinsic fluorescence allows for monitoring AD progression. Additionally, SeQDs persist and accumulate in the brain, further improving memory and learning over time in AD mouse models. **Conclusion:** Despite the promising potential of quantum dots in addressing the complex pathogenesis of neurodegenerative diseases, their routine medical application remains limited. This is due to the small number of available studies, their predominantly preclinical nature, and incomplete risk assessments. Concerns regarding potential toxicity-particularly long-term effects and mechanisms of brain entry-highlight the need for further comprehensive research

06. NEUROLOGICAL DEGENERATION IN THE CONTEXT OF SARS-COV-2 and VACCINATION

Ravi Shankar Manthri¹, Davit Tskhomelidze²

¹ Faculty of Medicine, Tbilisi State Medical University.

² Faculty of Molecular Biology, Tbilisi State Medical University

Introduction: Since 2019 pandemic there has been a significant number of people in few thousands (as per the limited research conducted) that have developed neurological disorders in a raise impacting one's ability to demonstrate cognitive thinking, memory recall of their past and conditions being progressive to a degree not limited to known neurological disorders like Parkinsons, Alzheimer's and Dementia. Vaccinations - Astra Zeneca, Pfizer and Moderna and potential impacts on the neurological conditions. **Objectives:** Objectives were to understand SARS-CoV-2 and/or it's vaccination(s) impact on neurological abilities, evaluate research methods used and studies conducted and identify gaps based on problem-based learning methods. **MethodS:** Methods used on literature review was systematic and meta-analysis backed with a quantitative assessment of clinical data over a period between Sep 2022 and Feb 2024 and about 3 articles were reviewed as per the reference [1],[2] & [3]. There were just over 2100 sample patients' assessments during the said period with various clinical conditions. **Results:** Patients with over 60 years have exhibited cognitive decline majority being vaccinated (1 to 2 doses of Astra Zeneca, Pfizer or combination of both) and about 10% not vaccinated. There were about 120 patients that were below 60 years that exhibited neurological disorders with no previous history or known conditions. Research review suggests that the quantity and the type of assessment used in the clinical research was not effective to draw a conclusion on the impacts of SARS-CoV-2 on neurological disorders. **Conclusion:** Comprehensive clinical and non-clinical studies are deemed necessary to understand and remediate long-term implications of SARS-COV-2 on humans for facts outlined in this abstract. The results were inconclusive as to whether the neurological disorders were associated with SARS-COV-2 or Vaccinations or combination of both.

07. Approaches to Oncological Rehabilitation After Mastectomy for Breast Cancer and Strategies for Managing Lymphedema Problem of Hypodynamia Among Modern University Students

Anna Vartanovi¹, Lela Maskhulia², Tornike Gakhokidze³

¹ Faculty of Physical Medicine and Rehabilitation, Tbilisi State Medical University.

² MD, PhD, Tbilisi State Medical University Professor, Dean of the Faculty of Physical Medicine and Rehabilitation, Head of the Physical Medicine Department

³ MD, Mammologist, Oncosurgeon, Surgeon of skin and soft tissues and Endocrinal surgeon

Introduction: Breast cancer is one of the most prevalent diseases worldwide. Fortunately, various treatment methods have been developed. However, mastectomy remains a commonly used approach and is often associated with a range of complications. Among them, lymphedema is one of the most frequent and challenging conditions to manage. Lymphedema is characterized by impaired lymphatic drainage from tissues, leading to swelling. **Objectives:** The aim of our study is to explore contemporary oncorehabilitation methods and strategies for lymphedema management. Furthermore, we seek to raise awareness about the significance of this issue across Georgia. **Methods:** We combined a structured literature review with a systematic collection of data on current national approaches to post-mastectomy oncological rehabilitation and lymphedema management. Sources included national and international guidelines, institutional protocols and peer-reviewed publications. Comparative analysis was conducted to identify gaps in current framework. **Results:** Currently, oncological rehabilitation offers several methods for its management. According to our literature review, oncological rehabilitation includes specific procedures for lymphedema management, prescribed based on patient needs. These procedures include manual lymphatic drainage, physical therapy, compression bandaging, occupational therapy, and psychological support—from both psychotherapists and family members. Our review revealed that, in the management of lymphedema, MLD in combination with compression therapy results in an average volume reduction of approximately 60.7 mL, corresponding to a 7.1% decrease. Physical exercise had a minimal effect on volume reduction (0.1–0.2 mL), although improvements in pain and heaviness were observed. **Conclusion:** In light of these findings, the next phase of our research will focus on the comprehensive investigation of contemporary oncorehabilitation methods, their potential integration into the national healthcare system, and the promotion of public and professional awareness regarding the critical importance of post-mastectomy rehabilitation in enhancing the quality of life for breast cancer survivors.

08. Ergonomics in Nursing: Narrative ReviewKeso Shavidze¹Tsiala Meshvelidze²¹ Faculty of Nursing, Tbilisi State Medical University.² Invited Lecturer at the Department of Physics, Biophysics, Biomechanics and Information Technologies, Tbilisi State Medical University:

Introduction: Nurses are fundamental to the healthcare system, providing essential care while confronting a range of physical and mental challenges daily. The ability to effectively manage these demands is closely linked to the design of their work environment. Ergonomics, the study of the relationship between humans, their workplace, and the tools they use, plays a vital role in creating safe, comfortable, and efficient conditions that support nurses' well-being and performance. **Objectives:** The objectives of this study are to explore the principles of ergonomics as they relate to nursing work environments, evaluate how ergonomic interventions can reduce physical and mental strain experienced by nurses, and emphasize the importance of ergonomically designed workplaces in enhancing nurse safety, comfort, and efficiency. **Methods:** Literature review was conducted by systematically searching relevant databases and scholarly sources. Key studies on nursing ergonomics, workplace design, and occupational health were selected and critically analyzed to gather current knowledge o creating safe and efficient nursing work environments. **Results:** A meta-analysis across 12 European countries, involving 5,153 nurses, revealed that 87.8% experience work-related musculoskeletal disorders (WMSDs), which substantially impair job performance and the quality of patient care. In contrast, data from the United States demonstrate that the implementation of ergonomic training programs, including education on proper movement techniques and the use of supportive equipment have effectively reduced work-related injury risks by 70–80%. **Conclusion:** Ergonomics remains an underexplored yet critical area within the Georgian healthcare system. Promoting ergonomic knowledge through dedicated training programs and further research is essential to improving nursing practice. Enhanced ergonomic literacy will empower nurses to utilize assistive devices effectively, leading to safer, more efficient work environments and better overall performance.

09. The Review of the Impact of Toxic and Narcotic Drugs on Human HealthMariam Kiziria¹ Nino Nizharadze² Nino Imnadze³¹ Faculty of Pharmacy, Tbilisi State Medical University.² Invited Lecturer at the Department of Physics, Biophysics, Biomechanics and Information Technologies, Tbilisi State Medical University³ Associated Professor, Department of Pharmaceutical and Toxicological Chemistry, TSMU

Introduction: The recreational use of intoxicating and/or narcotic substances is a global problem that remains insufficiently addressed in Georgia. Generally, these substances are typically prescribed to alleviate pain associated with severe diseases such as cancer, multiple sclerosis, schronic pain, parkinson's disease, narcolepsy, etc. However, their inappropriate use can lead to often irreversible health consequences like drug addiction, which remains a significant social challenge for the population. ^[1] **Objectives:** The main goal of this review was to raise awareness and educate the young generation and future health specialists at TSMU about the extensive and harmful health effects associated with intoxicating and narcotic substances. Particular focus was on stimulants, which trigger the release of body's natural energy- regulating neurotransmitters- EPI, NE and dopamine. **Methods:** The review was conducted through a comprehensive peer-reviewed literature using databases such as Scope, NIH. Emphasis was on randomized studies and high-quality review articles that examined both the therapeutic and harmful aspects of psychoactive substance use. By exploring both sides of the issue—clinical benefits and risks associated with recreational use—the review aimed to provide a balanced and evidence-based perspective. **Results:** According to a number of scientific studies devoted to the medical use of amphetamines and cannabinoids, there is broad consensus regarding their therapeutic potential. Nonetheless, their phramaceutic use must be carefully monitored by medical professionals. For example, cannabis is associated with pshychotic symptoms, including detachment from reality, severe anxiety and panick attacks. Our literature review highlights that, despite those risks, a significant portion of population remains insufficiently informed about the dangers associated with the recreational use of phsychoactive substances. **Conclusion:** To conclude, it is important to raise the awareness of the population by giving the knowledge in a well-founded manner, brochures, information sheets and public talks to protect adolescents from these substances.

10. The Problem of Microplastics in Environmental Medicine (Literature Review)

Salome Bezarashvili¹ Mariam Managadze²

¹ Assistant-Professor, PhD in Public Health, Tbilisi State Medical University.

² Student of the Faculty of Public Health, Tbilisi State Medical University.

Introduction: Microplastics represent one of the most significant challenges in modern environmental medicine due to their widespread distribution and potential adverse effects on human health. These compounds enter the environment through various routes, including marine and freshwater sources, ambient air, and food products, increasing human exposure. **Objectives:** The study aimed to analyze the main sources, global distribution, and pathophysiological effects of microplastics on human health based on recent scientific literature. **Methods:** This study is based on a narrative literature review conducted in accordance with PRISMA guidelines to ensure methodological transparency and accuracy. A comprehensive search was performed in the PubMed and Google Scholar databases, covering the period from 2014 to 2024. The following keywords were used: "microplastics," "human health," "bioaccumulation," "microplastics ingestion," and "toxicology of microplastics." The Inclusion criteria were peer-reviewed studies focusing on the impact of microplastics on human health, systematic reviews, meta-analyses, and original research articles. After the initial screening of 134 articles, 37 met the final eligibility criteria and were analyzed in depth. Literature management was conducted using Zotero, while Microsoft Excel was used for data synthesis and thematic organization. **Results:** The findings indicate that microplastics have bio accumulative properties and are linked to serious health effects, including endocrine disruption, inflammation, immune dysfunction, cancer risk, and neurodegenerative diseases. **Conclusion:** Strengthening control measures across drinking water, food, and air quality to mitigate microplastic exposure, supported by coordinated efforts in environmental regulation, public health, and education.

11. Does Gut Microbiome Dysbiosis Contribute to the Early Onset of Type 1 Diabetes Mellitus in Children? A systematic review.

Akshaya Srinivasan¹, Angeline Abraham¹, Cheryl Vanessa¹,

¹ Tbilisi State Medical University, American MD Program.

Introduction: Early onset type 1 diabetes mellitus (T1DM) in pediatric patients is a rising worldwide health concern. Increasing evidence shows environmental factors like gut microbe alterations may trigger autoimmune β -cell destruction resulting in T1DM (Brown 2020). However, the exact mechanism connecting them is partially understood. **Objectives:** This paper evaluates associations between gut microbiome dysbiosis and early-onset T1DM, identifying potential microbial markers for early detection and intervention. **Methods:** 15 peer reviewed studies (2015-2025) in English, were systematically reviewed using PRISMA guidelines. Studies were from PubMed and Scopus, including the TEDDY cohort and longitudinal studies using 16S Rna sequencing and metaproteomics. Studies on children from infancy to T1DM onset with microbiome profiling were included; non-human studies and reviews were excluded. Newcastle-Ottawa Scale was used for assessing the risk of bias and a descriptive synthesis of results was done. **Results:** Children with early-onset type 1 diabetes mellitus (T1DM) have a simpler gut microbiome and a particular shortage of butyrate-makers like *Faecalibacterium prausnitzii* and *Roseburia* (Smith 2019) has been found. Simultaneously, an increase in pro-inflammatory and pathogenic species, including several strains of *Bacteroides*, *Proteobacteria* and *Escherichia coli* was noted. This interrupt synthesis of short-chain fatty acids, bile acids, and vitamins while increasing lipo polysaccharide production. Animal studies revealed development of hyperglycemia and pancreatic inflammation after receiving T1DM gut microbiota. Interventional studies show several benefits with probiotics, prebiotics, and even fecal microbiota transplantation. However, strong clinical evidence is still upcoming. **Conclusion:** Imbalance of gut microbiome may play a role in early-onset T1DM, delivering promise for early diagnostics and interventions. Further research into personalized microbial therapies is warranted.

12. Biofilm-Inspired Encapsulation of Beta Cells: A Literature Review on a Novel Strategy for Immune Protection in Type 1 Diabetes

Sharon Andrea Fernando¹

¹ International Faculty of Medicine and Dentistry, Tbilisi State Medical University

Introduction: Type 1 diabetes mellitus (T1DM) results from autoimmune destruction of pancreatic beta cells, leading to absolute insulin deficiency. Although islet transplantation exhibits therapeutic potential, primary limitations encompass immune rejection (Calafiore 2003). Inspired by bacterial biofilms' immune evasion mechanisms, researchers have developed biofilm-like encapsulation systems to protect transplanted beta cells, whilst avoiding the necessity for immunosuppression (Gao 2022). **ObjectiveS:** This literature review evaluates the effectiveness of biofilm-inspired encapsulation strategies in protecting beta cells from immune destruction, with prospects of enhancing transplant viability. **MethodS:** Following PRISMA 2020 guidelines, an extensive literature search was executed using PubMed, Scopus, and Google Scholar for articles published between 2010 and 2024. Researched terms included: "beta cell encapsulation," "biofilm mimicry," "immune evasion," and "Type 1 diabetes." Approximately 35 peer-reviewed, English-language studies were included in accordance with encapsulation materials and immunoisolation (de Vos, Spasojevic and Faas 2010). Non-peer-reviewed and non-English articles were excluded. **Results:** Materials such as hydrogels and polyethylene glycol (PEG) derivatives provide selective permeability to glucose, insulin, and cytokines, whilst inhibiting immune penetration (Ghasemi 2021). Their mechanical strength, low endotoxin levels, and fibrotic resistance, confer to encapsulation stability (Marikar et al. 2022). These characteristics enhance beta cell viability, oxygenation, and glucose responsiveness. Moreover, nanoscale coatings promote immune invisibility, and durability (Gao 2022). Notably, recent clinical studies have demonstrated glucose control using encapsulated stem cell-derived β cells (Keymeulen et al. 2024). **Conclusion:** This review highlights biofilm-inspired encapsulations' potential in shielding beta cells without eliciting an immune response, thereby enhancing transplant viability (Gao 2022). However, long-term compatibility and functionality are obstacles needed to be addressed (de Vos, Spasojevic and Faas 2010). Future directions prioritise improvement of biocompatibility, manufacture, and implantation methods (Marikar et al. 2022).

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ABSTRACTS OF THE 10TH
INTERNATIONAL
ACADEMIC MEDICAL
CONGRESS OF
MARANHÃO (X
COIMAMA) 2025

IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

Abstracts of the 10th International Academic Medical Congress of Maranhão (X COIMAMA) 2025

Oral Presentations

RESEARCH ABSTRACTS

01. SURGICAL TECHNIQUES FOR THE TREATMENT OF CERVICAL INSUFFICIENCY: AN INTEGRATIVE REVIEW FROM 2015 TO 2024

Beatriz Mota Moreno¹, Alice Beatriz Tomaz Tavares¹, Stefanny Rafaelly Freitas Garcia¹ and Thalita Santana Conceição¹.

¹ Federal University of Maranhão

INTRODUCTION: Cervical insufficiency or incompetence (CIN) is defined as dilation and shortening of the cervix before the 37th week of gestation, which can result in miscarriage or premature birth. Given the high risk of these pregnancies, uterine cerclage is the most effective option, reducing the incidence of adverse outcomes by up to 20%. **OBJECTIVE:** Analyze the different surgical techniques for IIC. **METHODS:** This is an integrative review of articles published between 2015 and 2024 in the SCIELO, PubMed, and BVS databases. The following descriptors were used, extracted from DeCS/MeSH (Health Sciences Descriptors): ("Cerclagem Cervical") AND ("Incompetência do Colo do Útero") in Portuguese; and ("Cerclage, Cervical") AND ("Uterine Cervical Incompetence") in English. **RESULTS:** After the search, 11 articles were selected. Various cervix access routes can be used, such as vaginal and abdominal (laparotomic and laparoscopic). The most commonly used transvaginal cerclage technique (TVC) is divided into two forms. The McDonald technique involves suturing at the cervicovaginal junction, avoiding bladder or rectal injuries. Another option is the Shirodkar technique, which involves dissection of the vesicocervical mucosa and suturing at the internal os of the cervix. The McDonald technique is the most commonly used due to its simplicity and speed. On the other hand, the abdominal technique (TAC) can be applied in very short cervix cases and when the previous technique has failed. Although used as a second-line approach, this approach allows for better suture placement at the cervicoisthmic junction and a lower risk of vaginal infection/inflammation. Laparotomy, on the other hand, has higher surgical morbidity and a risk of complications such as bladder or bowel injury. Robotic surgery or laparoscopy allows for greater precision and safety. **CONCLUSION:** The choice of surgical technique, in addition to the surgeon's discretion, should consider the clinical condition and risks of each patient. There are no studies confirming the superiority of the McDonald technique compared to Shirodkar, and both should be used at the highest possible level. The laparoscopic approach, although more complex than CVT, has proven to be the most effective procedure for reducing preterm birth and maximizing neonatal survival. However, it still requires more training and is costly to healthcare systems.

02. EVOLUTION OF HERNIA SURGERIES IN THE SUS: TRENDS AND ECONOMIC IMPACT IN THE LAST DECADE

Anna Luiza Sobreira Torres¹, Paulo Victor De Aguiar Ribeiro¹, Kleydson Ferreira Lima¹, Maria Stephany Costa Soares¹, and Gutemberg Fernandes De Araujo¹.

¹ Federal University of Maranhão.

INTRODUCTION: Hernia surgeries are one of the main elective procedures in the Unified Health System (SUS), notable for their high frequency and impact on patients' quality of life. However, over the last decade, changes aimed at optimizing health services have influenced the profile and volume of these interventions. **OBJECTIVE:** In this context, the study seeks to analyze the evolution of hernia surgeries in the SUS over the last decade, with an emphasis on healthcare trends and economic repercussions. **METHODS:** This is a retrospective, cross-sectional, quantitative study based on secondary data from the Hospital Information System (SIH) of the Unified Health System (SUS). The categories selected were region, state, number of procedures, and total cost. The data were then collected and tabulated in an Excel spreadsheet for descriptive statistical analysis. **RESULTS:** During the period from 2014 to 2024, 2,735,678 hospitalizations for hernia surgeries were registered in the SUS, with an annual average of 273,567 procedures. The total accumulated cost in the period was R\$1.8 billion, with an annual average of R\$183.4 million, demonstrating an increase of 139.47% in the amount spent from 2014 to 2024. The average cost per surgery rose from R\$604.76 in 2014 to R\$974.33 in 2024, which corresponds to an increase of 61.11%. Regionally, the Southeast concentrated the highest number of hospitalizations (1,063,594), followed by the Northeast (843,615), South (433,925), North (213,635) and Central-West (180,909) regions. The largest percentage increase in the number of hospitalizations was recorded in the North Region (66.62%), while the smallest occurred in the Northeast (41.11%). As for the total cost, the Southeast also led with R\$725 million, followed by the Northeast (R\$544 million), South (R\$317 million), North (R\$13 million) and Central-West (R\$11 million), with the Northeast region having the second largest percentage increase in spending (159.49%). **CONCLUSION:** The study showed an increase in hernia surgeries performed by the SUS (Unified Health System) over the last decade, accompanied by an increase in the average cost per procedure. However, the Northeast region stands out, having the smallest percentage increase in the number of hospitalizations (41.11%) and one of the largest percentage increases in spending (159.49%). This discrepancy highlights the need for further analysis and public policies that promote regional equity and efficient use of SUS resources.

03. EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH DIABETIC RETINOPATHY IN PRIMARY CARE IN SÃO LUÍS, MARANHÃO.

Ana Caroline Muniz Silva¹, Bruno Eduardo Lopes de Mâcedo¹ and Elaine de Paula Fiod Costa¹.

¹ Federal University of Maranhão.

INTRODUCTION: Diabetic retinopathy (DR) is a chronic microvascular complication of diabetes mellitus (DM) and the leading cause of preventable blindness in the working-age population. The main risk factors include disease duration, poor glycemic control, systemic arterial hypertension (SAH), and dyslipidemia. Given its high prevalence and significant impact on quality of life, early diagnosis and regular follow-up are essential to prevent severe visual impairment. **OBJECTIVE:** To analyze the epidemiological profile of patients with DR in primary care in São Luís, Maranhão, Brazil. **METHODS:** This was a descriptive, cross-sectional, and quantitative study conducted in a primary healthcare center in São Luís. Consecutive patients with a prior diagnosis of DM, scheduled for ophthalmology consultations between July 2024 and May 2025, were included. Data were collected using a standardized clinical form comprising demographic information, history of DM and SAH, indirect ophthalmoscopy findings, and recommended management. Ethics approval: CEP 6.955.973. **RESULTS:** Among 310 patients evaluated, 65.8% were female, of whom 20% presented DR. The predominant age group was 51–60 years (32.3%). Regarding DM duration, 35.2% had less than 5 years of disease, while 27.4% had between 16 and 20 years. Most patients (52.9%) either did not have SAH or reported less than 5 years since diagnosis. Only 38.4% had attended an ophthalmology consultation within the previous year. No significant media opacities were observed in 69.7% of cases. Indirect ophthalmoscopy revealed no signs of DR in 52.6% of patients, non-proliferative DR in 19.4%, proliferative DR in 8.7%, macular edema in 6.1%, tractional retinal detachment in 1.9%, and previous laser photocoagulation scars in 3.9%. In 75.5% of cases, no immediate intervention was required, and only periodic follow-up was recommended; the remaining patients were referred for panretinal photocoagulation, anti-VEGF/corticosteroid therapy, or surgery. **CONCLUSION:** DR was more prevalent among women and in the 51–60-year age group, which corresponds to an economically active population. The presence of advanced DR in a significant proportion of patients suggests delayed diagnosis, likely due to limited access to regular ophthalmologic care (only 38.4% had a consultation within the last year). These findings highlight the need for health education strategies, active screening, and expanded access to specialized ophthalmologic services in primary care to prevent DR progression and reduce the risk of blindness.

04. EPIDEMIOLOGICAL ASPECTS OF BARIATRIC SURGERY IN BRAZIL AND MARANHÃO: DISTRIBUTION AND INEQUALITIES

Marlon Davi dos Santos Freitas¹, Caroline Moreira de Souza², Willk Mario Pinto França Lopes³, and Othon de Carvalho Bastos Filho⁴

¹Federal University of Maranhão

INTRODUCTION: Severe obesity is an increasing public health concern in Brazil, and bariatric surgery has emerged as a relevant strategy for its management. However, persistent inequalities in access and regional disparities limit its clinical and social impact. **OBJECTIVE:** To characterize the epidemiological panorama of bariatric surgery within the Brazilian Unified Health System (SUS), with emphasis on temporal, regional, and sociodemographic distribution,

and a specific focus on the state of Maranhão. **METHODS:** Observational study based on secondary data extracted from DATASUS/SIH-SUS from 2020 to 2024. Hospital Admission Authorizations (AIH) for bariatric procedures (intestinal bypass, vertical banded gastroplasty, and laparoscopic approach) were analyzed according to state, sex, and age group. **RESULTS:** More than 30,000 bariatric procedures were recorded nationwide, with progressive annual growth except for a drop in 2021, likely related to the COVID-19 pandemic. Laparoscopic surgery predominated due to clinical advantages. Women represented 87.3% of hospitalizations, concentrated between 30 and 49 years old. Marked regional inequalities were observed: Paraná, São Paulo, and Minas Gerais accounted for over 50% of surgeries, while North and Northeast states showed minimal participation. In Maranhão, 288 surgeries were performed in the period (<1% of the national total), showing modest growth and a predominance of the laparoscopic approach. **CONCLUSION:** Bariatric surgery has expanded in SUS but remains concentrated in few regions, reflecting structural inequalities. The predominance of women in productive age highlights social and cultural factors influencing access. In Maranhão, despite recent growth, the low availability of specialized services still restricts access. Public policies aimed at regionalization, multidisciplinary teams, and continuous care are essential to achieve sustainable outcomes in the management of severe obesity.

05. RESPIRATORY DISTRESS SYNDROME OF NEWBORN: NUMBER OF DEATHS BETWEEN 2014 AND 2024 IN THE STATE OF MARANHÃO

Judith Carneiro Maciel¹, Eslainy Xavier Matos¹, Luca Ribeiro Santos Araújo¹, and Wellyson da Cunha Araújo Firmo¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Respiratory Distress Syndrome of Newborn (ARDSN), or hyaline membrane disease, is characterized by low levels of pulmonary surfactant in the lungs of newborns (NBs). This causes respiratory distress in babies, especially those born before 28 weeks. This surfactant deficiency, combined with the minimal removal of lung fluid and the limited surface area of the lungs for efficient gas exchange, leads to serious respiratory complications in this population. **OBJECTIVE:** Analyze the number of deaths from ARDSN in Maranhão between 2014 and 2024. **METHODS:** This is an epidemiological, descriptive, and quantitative study. Data were collected from the Mortality Monitoring Panel, through the Department of Epidemiological Analysis and Surveillance of Noncommunicable Diseases (DAENT). The P22.0 indicator (ARDSN) was used. The variables were: newborn age, sex, ethnicity/skin color, reference years between 2014 and 2024, and deaths per occurrence in the state of Maranhão. Data were analyzed and tabulated in the Google Docs® platform. **RESULTS:** During the years 2014 and 2014, 917 deaths from ARDSN were reported in the state of Maranhão. Of this total, the year with the highest number of newborn deaths was 2014, 110 deaths (12.00%), while the year with the lowest number of notifications was 2020, 58 deaths (6.32%). In addition, there was a decrease in the number of deaths reported in the interval from 2014 (110 deaths) to 2024 (63 deaths), corresponding to a decline of 42.73%. Regarding sex, the number of deaths of male newborns was slightly higher than that of females. Respectively, 500 deaths (54.53%) against 415 notifications (45.26%). Regarding ethnicity/color, brown RN account for the highest number, 643 deaths (70.12%), followed by white/unknown 133 (14.50%), white 121 (13.20%), black 11 (1.20%), indigenous 9 (0.98%) and yellow 0 (0.00%). **CONCLUSION:** It is concluded that ARDSN is a public health problem in the state of

Maranhão. However, the number of deaths among newborns with this condition has decreased significantly. This reveals improvements in both hospital preparedness to reverse more critical postpartum cases and increased access to prenatal care. These measures aid in the early identification of problems and risks related to prematurity, promoting better care for newborns.

06. INFLUENCE OF PARENTING ON THE DEVELOPMENT OF EXECUTIVE FUNCTIONS IN SCHOOL-AGED CHILDREN: AN INTEGRATIVE REVIEW

Karylaine Castro Andrade¹, Emily de Fátima Castro Cavalcante¹, Deisiele Figueiredo Pereira¹, Kellen de Jesus Farias da Luz¹, and Monica Elionor Alves Gama¹

¹ Federal University of Maranhão.

INTRODUCTION: Executive functions (EFs) are defined as the biological process involving a set of skills and abilities responsible for the conscious control of actions and thoughts. **OBJECTIVE:** This integrative review aims to synthesize the main evidence regarding the relationship between executive functioning in early childhood and parenting. **METHODS:** It is an integrative literature review conducted using the databases of the Scientific Repository of the University of Coimbra and CAPES Journals, employing the descriptors "Executive functions," "Children," and "Parenting," and selecting articles published between 2015 and 2025 in Portuguese. Out of 31 studies found, 7 were included and 25 excluded for not meeting the study's objective. **RESULTS:** Organized, predictable, and safe family environments with cooperative and affectionate relationships significantly promote the development of Executive Functions (EFs). Inhibitory control is the primary skill modulated by consistent parenting practices, correlating with moral reasoning and emotional self-regulation. An integrative review of 13 articles revealed that indulgent parenting style (70% of studies) and authoritative style (30% of studies) were associated with better socio-emotional development, emotional intelligence, and self-esteem, due to high levels of "parental warmth." In contrast, authoritarian and neglectful styles were linked to lower emotional intelligence and increased violence. Specifically, a study involving 30 children indicated that a more appropriate parenting style results in better interference control in the Semantic Stroop Test. However, "inconsistent punishment" increased interference reaction time in the Stroop test, and "physical abuse" also correlated with longer reaction times in the Stroop Test. Socioeconomic variables, such as maternal education and family income, showed a correlation with EF performance. Parental investment in stimulating activities, such as reading, directly impacts cognitive development. **CONCLUSION:** Parental consistency and affectionate family interactions—characteristics of indulgent and authoritative styles—promote inhibitory control, moral reasoning, and emotional self-regulation. Furthermore, socioeconomic variables like maternal education and family income demonstrate a correlation with EF performance, highlighting the importance of environment and parental investment for healthy child development.

07. DISTRIBUTION OF SICKLE CELL DISEASES ACCORDING TO SOCIOECONOMIC INDICATORS IN MUNICIPALITIES IN NORTHEAST BRAZIL

Ana Cristina Oliveira Maciel¹, Marilene de Fátima Reis Ribeiro¹, Cyrene Piazeria Silva Costa¹, Mariana Moreno da Silveira Teixeira¹, Mariana Nogueira de Carvalho¹, and Viviane Cardoso Lima de Oliveira¹.

¹ CEUMA University

INTRODUCTION: Sickle cell diseases constitute a group of hereditary hemoglobinopathies with a high prevalence in Brazil, particularly in

the North and Northeast regions. These conditions are often associated with social vulnerability, highlighting the importance of understanding the distribution of cases in light of socioeconomic and public health indicators. In this context, the Human Development Index (HDI) and the infant mortality rate emerge as relevant markers for assessing the social impact of these diseases at the municipal level. **OBJECTIVE:** To analyze the distribution of sickle cell disease cases in relation to the Human Development Index (HDI) and infant mortality rate in a state in northeastern Brazil. **METHODS:** This cross-sectional study was conducted using data from the only blood center in the state of Maranhão, Brazil. Information on diagnosis, sex, age, and municipality of residence was obtained from electronic medical records in 2024. Municipal HDI and infant mortality data were retrieved from the most recent national census conducted in 2022 by the Brazilian Institute of Geography and Statistics (IBGE), and categorized as low/medium HDI when < 0.7 and high infant mortality when > 10 deaths per 1,000 live births. Descriptive and bivariate analyses were performed using the Chi-square and Fisher's exact tests. **RESULTS:** Of the 1,736 patients attended at the blood center, 74 had missing data in key variables and were excluded from the analysis, resulting in a final sample of 1,662 individuals. Among them, 50.78% were male and 67.49% were from the northern macro-region of the state. The median age was 16 years (IQR 25%: 9; IQR 75%: 25). Regarding diagnosis, 92.24% of the sample had sickle cell anemia or β -thalassemia, and 7.76% presented the heterozygous form of the disease. Bivariate analysis revealed a statistically significant difference in the distribution of sickle cell disease cases according to municipal HDI, with 70.76% of patients residing in municipalities with low or medium HDI ($p = 0.036$). However, no significant differences were found regarding the distribution of sickle cell anemia cases in relation to municipal infant mortality rates ($p = 0.24$). **CONCLUSION:** Sickle cell diseases disproportionately affect individuals living in more socially disadvantaged contexts in the state of Maranhão, particularly those residing in municipalities with low or medium HDI.

08. ASSESSMENT OF THE MENTAL STATE OF PATIENTS WITH HEART FAILURE FOLLOWED UP IN A TERTIARY HEALTH CENTER

Eliosmar da Cruz Filho¹, Mariana Guimarães Rocha¹, Sara Raquel Ribeiro Pires¹, Darlem Sousa Braga¹, Leticia Neves Siqueira¹ and José Albuquerque de Figueiredo Neto²

¹ Federal University of Maranhão.

INTRODUCTION: Heart failure (HF) is the heart's inability to meet tissue blood demands. Emotionally, patients with HF experience greater distress, anxiety, and fear, as the diagnosis of a serious and progressive disease generates a new lifestyle, with adaptations due to functional restrictions. Therefore, research is needed to investigate the relationship between HF and mental health. **OBJECTIVE:** Analyze how the diagnosis of HF can impact the mental state of affected patients. **METHODS:** This was an observational, cross-sectional, quantitative study conducted between 2021 and 2024 with 195 patients with HF treated at a tertiary hospital in Maranhão. The GAD-2 and PHQ-2 questionnaires were used to assess the risk of anxiety and depression, respectively. Data were processed and analyzed using R Studio software (version 4.4.1). Fisher's exact test and Student's t-test were used for inferential analyses, with a significance level of 5%. The research was approved by the Ethics Committee (CAAE: 25756919.9.2004.5086). **RESULTS:** Regarding the epidemiological profile, the majority of patients were male (67.69%); self-identified as brown (60.51%); married (48.2%); had incomplete elementary education (25.38%); retired (46.15%); and lived in their

own home (84.61%). The median age of patients was 59 years. The median monthly family income was R\$1,420.00, while the median expenditure on medication was R\$500.00. Regarding the risk of mental illness, 30.77% of patients had a GAD-2 score ≥ 3 , indicating a risk for generalized anxiety disorder (GAD). Furthermore, 26.67% had a PHQ-2 score ≥ 3 , indicating a risk for depression. Statistical analyses revealed a significant association between the risk of GAD and the variables sex ($p = 0.01339$), education ($p = 0.04736$), and medication expenditure ($p = 0.01841$). For the risk of depression, only the sex variable showed a statistically significant association ($p = 0.001897$). **CONCLUSION:** The study results demonstrate that a diagnosis of HF impacts patients' mental health, particularly the development of anxiety and depression. The need for a multidisciplinary approach to HF patient care is evident, including psychological assessment and monitoring as an integral part of treatment, especially among the most susceptible and vulnerable populations identified by the study.

09. EFFECT OF A MONOTERPENE ON HEMODYNAMIC PARAMETERS IN RATS SUBJECTED TO AN ACUTE MYOCARDIAL INFARCTION MODEL

João Victor Cunha Silva¹, Maria Clara Santos Araújo, and Rachel Melo Ribeiro¹

¹ Federal University of Maranhão.

INTRODUCTION: Cardiovascular disease (CVD) is the leading cause of death worldwide, with acute myocardial infarction (AMI) being the most prevalent. Arterial hypertension is a key risk factor for AMI. Experimentally, the isoproterenol (ISO)-induced AMI model in animals is well-established in the literature. Regarding CVD, polyphenol-based formulations possess antioxidant and anti-inflammatory properties. In this context, there is a monoterpene (5-isopropyl-2-methyl-phenol), abundant in the essential oils of oregano and thyme, to which cardioprotective properties are attributed. **OBJECTIVE:** To evaluate the effect of the monoterpene (M20) on the hemodynamic parameters of rats subjected to AMI. **METHODS:** This study was approved by the Animal Ethics Committee under protocol number 23115.002016/2023-60. Ten adult, male, previously healthy Wistar rats (*Rattus norvegicus*), approximately 45 days old and weighing around 250 grams, were used. Initially, the animals were randomized into 3 groups of 3 animals each: Control (not induced to AMI); ISO (induced to AMI); CARV (treated with M20 at 20mg/kg/day and induced to AMI). They underwent a 15-day adaptation period with free access to water and chow, and weight monitoring. Subsequently, the CARV group received oral gavage of M20 for 4 weeks; the other groups were gavaged with water. After the treatment, the CARV and ISO groups were subjected to an AMI induction model with two injections of ISO at a dose of 85 mg/kg, 24 hours apart. They were then anesthetized with ketamine (80 mg/kg) and diazepam (5 mg/kg) for the measurement of hemodynamic parameters: systolic blood pressure (SBP), diastolic blood pressure (DBP), and mean arterial pressure (MAP), followed by euthanasia. Data are presented as mean $\pm$ standard error, with a $p < 0.05$ considered statistically significant. Statistical analysis was performed using GraphPad Prism 9.0 software. **RESULTS:** The CARV group showed a relevant improvement in hemodynamic parameters compared to the Control and ISO groups. A significant reduction ($p < 0.05$) was observed in SBP [111 ± 26.29 mmHg vs. 164 ± 2.64 mmHg (Control) and 152 ± 6.94 mmHg (ISO)], DBP [95.24 ± 24.91 mmHg vs. 136 ± 10.79 mmHg and 134.8 ± 9.23 mmHg, respectively], and MAP [101.3 ± 24.87 mmHg vs. 137 ± 9.77 mmHg and 154 ± 3.51 mmHg, respectively]. **CONCLUSIONS:** The monoterpene M20 improved all hemodynamic parameters in the treated animals

through a hypotensive effect, supporting the hypothesis that it possesses cardioprotective properties.

10. EVALUATION OF THE EFFECT OF FRIDERICIA PLATYPHYLLA EXTRACT ON THE ELECTROCARDIOGRAPHIC PARAMETERS OF RATS

Kellen De Jesus Farias Da Luz¹ and Rachel Melo Ribeiro¹.

¹ Federal University of Maranhão.

INTRODUCTION: *Fridericia platyphylla*, from the Bignoniaceae family, is a plant native to the Brazilian Cerrado, commonly known as "cipó-una" or "cervinha do campo." Recent studies highlight that flavonoids, triterpenes, saponins, tannins, and other polyphenols are important components of this species. The hydroethanolic extract of the plant has demonstrated antispasmodic activity in isolated rat jejunum, acting through the inhibition of Ca^{2+} influx via voltage-dependent calcium channels. **OBJECTIVE:** This study aimed to evaluate the biological potential of the effects of the hydroethanolic extract of *Fridericia platyphylla* (EFP) on cardiovascular parameters in rats. **METHODS:** Specifically, the following steps were carried out: obtaining the hydroethanolic extract of *Fridericia platyphylla* (EFP); evaluating feed intake and weight progression in animals treated with the extract; measuring electrocardiographic tracing variables; and determining body temperature and oximetry. For this purpose, the animals were previously randomized into groups distributed as follows: EFP100 group (treated with 100 mg/kg of EFP), EFP250 group (treated with 250 mg/kg of EFP), Healthy Control group (treated with 0.1 mL/100 g of water), and ISO group (treated with 0.1 mL/100 g of water). All animals received oral treatment for 15 days, administered once daily. At the end of this period, cardiac injury was induced with isoproterenol (85 mg/kg) in the treated groups and the ISO group on days 14 and 15, via subcutaneous administration. The study was approved by the Ethics Committee on Animal Use (CEUA), in accordance with the Guidelines for the Care and Use of Laboratory Animals (protocol no. 23115.019856/2023-61). **RESULTS:** The results showed that the EFP did not cause significant changes in the animals' body temperature or oximetry, suggesting an adequate safety profile. Furthermore, the electrocardiographic analysis indicated that the EFP group exhibited a better tracing pattern compared to the ISO 85 mg/kg group, with the absence of extrasystoles and the presence of a regular sinus rhythm. However, the animals presented an inverted T wave, which is suggestive of myocardial injury. **CONCLUSION:** In summary, this research adds value to the bioprospecting of this plant, resulting in the development of a promising oral therapeutic alternative due to its safety profile and improvement in electrocardiographic patterns. Therefore, based on future preclinical and clinical studies, this formulation may be further established as a valuable resource for enhancing human health.

11. ASSOCIATION BETWEEN ROBSON CLASSIFICATION AND APGAR: AN APPROACH BASED ON OBSTETRIC GROUPS

Ana Beatriz Martins Rosa¹, Hândrya Karla Gomes Martins¹, Júlia Costa e Silva¹, Juliana Fontes Gondin Silva¹, Maria Fernanda Lauande Cardoso Lima¹ and Alcione Miranda dos Santos¹

¹ Federal University of Maranhão.

INTRODUCTION: Performing cesarean sections without appropriate clinical indication remains a major public health issue in countries such as Brazil. To address this, the Robson classification was developed to standardize the analysis of cesarean section rates and to better characterize obstetric populations. Meanwhile, the Apgar

score is widely used to assess neonatal vitality in the first minutes of life. Despite the extensive use of both systems individually, significant gaps remain in understanding the relationship between Robson classification groups and neonatal outcomes as measured by the Apgar score. **OBJECTIVE:** To verify the existence of an association between the Robson classification and the Apgar score. **METHODS:** This was a cross-sectional, analytical, observational study including newborns residing in the Northeast region of Brazil in 2023, as recorded in the Live Births Information System (SINASC). The variables analyzed were maternal age, birth weight, type of delivery, race/ethnicity, type of pregnancy, Robson classification group, and 5-minute Apgar score. Statistical analyses were performed using R software. To investigate the association between Robson groups and Apgar scores, odds ratios (ORs) and their respective 95% confidence intervals (CIs) were estimated. **RESULTS:** In 2023, SINASC registered 703,448 births in the Northeast region, of which 648,427 were included in the analysis. Most mothers self-identified as brown (78.87%), had singleton pregnancies (97.87%), and underwent cesarean delivery (57.7%), with a mean age of 27 years. Robson groups 3, 5, and 1 accounted for 69.28% of the cases. Among newborns, 78.87% were classified as brown, with a mean birth weight of 3,181 g. A total of 98.85% had a 5-minute Apgar score ≥ 7 , while 1.15% had a score < 7 . Mothers classified in Robson groups ≥ 6 had higher odds of giving birth to infants with severe alterations in heart rate, respiratory effort, muscle tone, reflex irritability, and/or skin coloration, with group 9 presenting the highest risk (OR = 2.78, 95% CI: 1.97–3.84). In contrast, Robson groups ≤ 5 showed a reduced or nonsignificant risk for Apgar < 7 . **CONCLUSION:** These findings indicate that the maternal obstetric profile assessed by the Robson classification is a relevant predictor of neonatal health. The potential use of the Robson classification as a regulatory tool for obstetric practices, based on group-specific risk, should be further explored.

12. ADAPTIVE RADIOTHERAPY GUIDED BY ARTIFICIAL INTELLIGENCE IN CERVICAL CANCER: A SYSTEMATIC REVIEW

Leandro Moreno da Cruz¹, Jilmário Gomes de Santana Júnior¹, Nadylla Glenda Gomes Araújo¹, Edivaldo Coelho Madeira de Sousa Júnior¹, Ryan Felipe de Almeida Costa¹, and Ana Gabriela Caldas Oliveira¹.

¹ Federal University of Maranhão

INTRODUCTION: Adaptive radiotherapy (ART) is a technique that allows for treatment adjustment, enabling more precise dose distribution, ensuring better tumor coverage, and avoiding damage to organs at risk (OAR). In the last 5 years, it has been associated with Artificial Intelligence (AI) with the goal of streamlining this process. **OBJECTIVE:** The aim of this study is to analyze the current perspectives on the use of AI-guided ART in the treatment of cervical cancer (CC), considering applicability, dose adjustment, and toxicity reduction. **METHODS:** This is a systematic literature review that used the PubMed, Scopus, BVS, and Embase databases. The following descriptors were used: ("uterine cervical neoplasms") AND ("adaptive radiotherapy") AND ("artificial intelligence" OR "deep learning" OR "machine learning") AND ("treatment outcome" OR "tumor control" OR "dose precision"). Thirty-four articles were found, of which 6 were selected and independently evaluated by the authors, according to the inclusion criteria: controlled clinical trials, randomized studies, and meta-analyses. Duplicate articles in the databases, reviews, and those outside the scope of the study were excluded. **RESULTS:** AI-guided ART reduced gastrointestinal (GI) and genitourinary (GU) toxicities in 21 patients when compared to conventional plans. GI and GU toxicity

rates were 19.0% and 0%, respectively, versus 43.3% in the control group. Another study with 10 patients showed a reduction in damage to organs at risk (OARs). An automated decision model was developed to determine the need for replanning. With a significant reduction in decision time, the model optimized the workflow, reducing evaluation time from 5–8 minutes to less than 2, without compromising the quality of the plans. A machine learning (ML) model was created to predict the ideal applicator for brachytherapy; the result was equivalent to that of specialists, reducing the accumulated dose in the OARs. Another study expanded the use of knowledge-based planning (KBP) in brachytherapy applicators. The model predicted the doses and reduced their distribution in the OARs by up to 10.7%, proving useful in optimization. **CONCLUSION:** AI-guided radiotherapy has proven to be a promising strategy in the treatment of cervical cancer, indicating a reduction in toxicities, protection of organs at risk, and precision in dose delivery, with the potential to optimize planning and improve applicator selection, without compromising treatment quality when compared to conventional techniques.

13. IMPACT OF ALCOHOLIC BEVERAGE CONSUMPTION AND SMOKING ON HOSPITALIZATION OF PATIENTS WITH HEART FAILURE

Pedro Massagli Yamada¹, Maria Júlia de Sena Lopes¹, Paulo Victor de Aguiar Ribeiro¹, Darlem Sousa Braga¹, Eliosmar da Cruz Filho¹, Isabela Marinho da Cunha¹ and José Albuquerque de Figueiredo Neto¹.

¹ Federal University of Maranhão

INTRODUCTION: Heart failure (HF) is a clinical manifestation resulting from dysfunction in ventricular filling or blood ejection. Evidence indicates that excessive alcohol consumption is associated with higher rates of HF, especially in individuals with structural or functional cardiac alterations. Prolonged smoking is also considered a significant aggravating factor of this cardiovascular condition. **OBJECTIVE:** To analyze the implications of alcohol consumption and smoking on the hospitalization of patients with HF in a tertiary hospital in Maranhão. **METHODS:** This was a cross-sectional, retrospective, quantitative study conducted with patients diagnosed with Heart Failure with Reduced Ejection Fraction (HFrEF) treated at the cardiology outpatient clinic of a tertiary public hospital in Maranhão between 2021 and 2024. The final sample included patients with complete data on cardiovascular mortality and number of hospitalizations. The independent variables were related to alcohol consumption (status, monthly quantity, duration of use, and abstinence) and smoking (status, smoking history, and abstinence duration). The outcomes assessed were cardiovascular mortality (binary variable) and total number of hospitalizations (continuous). RStudio® software (version 4.5.0) was used. Fisher's exact test was applied for categorical variables. For continuous or ordinal variables, the Wilcoxon test (two groups), Kruskal-Wallis test (three or more groups), and Spearman correlation test were used. The significance level adopted was 5% ($p < 0.05$). Study approved by the CEP under protocol number 25756919.9.2004.5086. **RESULTS:** A total of 156 patients with HFrEF were analyzed. There was no statistically significant association between alcohol consumption and the outcomes of cardiovascular death or hospitalizations. The same was observed for smoking, although a trend toward an association between longer smoking abstinence and fewer hospitalizations was noted ($p = 0.085$). **CONCLUSION:** No significant associations were found between alcohol consumption or smoking and the outcomes assessed. The study's limitations include its cross-sectional design,

the use of retrospective data, and the relatively small sample size, which may have reduced the statistical power to detect associations. Multicenter studies with larger sample sizes and prospective designs are recommended to better elucidate the impact of these exposures on the progression of HF.

14. ORAL MONOTERPENE ATTENUATES INFARCTION AREA AND CARDIAC HYPERTROPHY IN AN EXPERIMENTAL MODEL OF MYOCARDIAL INFARCTION IN RATS

Lara Luiza Pitombeira Rocha¹, Raphael Furtado Marques¹, Andressa Coelho Ferreira¹ and Rachel Melo Ribeiro¹

¹ Federal University of Maranhão (UFMA)

INTRODUCTION: Cardiovascular diseases (CVDs) are the leading cause of death worldwide, with acute myocardial infarction (AMI) being one of the main contributors to high morbidity and mortality rates. In this context, natural compounds with antioxidant and anti-inflammatory properties have attracted scientific interest as potential cardioprotective agents. Among these, monoterpenes stand out for having demonstrated cardiovascular benefits in studies using animal models. **OBJECTIVE:** To analyze the effect of oral treatment with monoterpene on the infarct area and the estimated cardiac hypertrophy in rats induced with AMI. **METHODS:** This study was approved by the Animal Research Ethics Committee under No. 23115.002016/2023-60. Male, normotensive Wistar rats (*Rattus norvegicus*) were randomly assigned to three groups: control (healthy), ISO (AMI induced with isoproterenol 85 mg/kg without treatment), and MON (AMI induced with isoproterenol 85 mg/kg after oral gavage with monoterpene 20 mg/kg/day for 30 days). At the end of the experiment, animals were anesthetized and euthanized for heart removal. Cardiac hypertrophy was estimated by the relative heart weight (g/100g of body weight). Infarct area was analyzed using triphenyltetrazolium chloride (TTC) staining for 30 minutes, followed by sample photography and quantification using ImageJ software. Statistical analysis was performed using GraphPad Prism version 9.0. Data are presented as mean $\pm$ standard error of the mean. **RESULTS:** Regarding the percentage of infarcted area, the control group had a mean of $5.37 \pm 0.71\%$, the ISO group showed $25.95 \pm 4.87\%$, and the MON group had $7.27 \pm 2.07\%$. The differences were statistically significant between the control and ISO groups ($p = 0.0027$) and between the MON and ISO groups ($p = 0.0085$) for this parameter. Regarding heart weight, the control group had a mean of 0.3122 ± 0.009 g/100 g, the ISO group 0.4761 ± 0.015 g/100 g, and the MON group 0.4200 ± 0.013 g/100 g. Statistically significant differences were observed between the control and ISO groups ($p < 0.0001$), the MON and ISO groups ($p = 0.03$), and also between the MON and control groups ($p = 0.0003$). **CONCLUSION:** Oral treatment with monoterpene demonstrated a protective effect against the impacts of AMI in rats, being able to reduce both the infarct area and the estimated cardiac hypertrophy. Therefore, further studies are needed to evaluate the potential use of monoterpenes as a natural therapeutic alternative for cardiovascular diseases.

15. ASSOCIATION OF ANTHROPOMETRY AND FIBROSIS-4 INDEX IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND METABOLIC HEPATIC STEATOSIS

Lara Luiza Pitombeira Rocha¹, Leandro Moreno da Cruz¹, Osnar Gustavo de Santana Lima¹, Mayara Regina Fontinele Rocha¹, Pryscylla Vieira Vezzosi¹, Filipe Rainan Costa Silva¹ and Rossana Santiago De Sousa Azulay¹

¹ Federal University of Maranhão

INTRODUCTION: Visceral fat plays a key role in the pathophysiology of hepatic fibrosis—characterized by excessive accumulation of extracellular matrix in the liver—since its excess is associated with the release of inflammatory mediators and metabolic stress, which stimulate fibrous tissue production and increase the risk of metabolic diseases. Anthropometric measures such as Body Mass Index (BMI), Waist Circumference (WC), and Neck Circumference (NC) are simple and useful tools for assessing this risk. **OBJECTIVE:** To evaluate the association of BMI, NC, and WC with the Fibrosis-4 Index (FIB-4) score—a marker used to estimate the risk of hepatic fibrosis—in patients with type 2 diabetes mellitus (T2DM) and metabolic-associated fatty liver disease (MAFLD) treated at a referral center for endocrinology. **METHODS:** This is a retrospective study based on the analysis of medical records of patients with T2DM and MAFLD followed between 2022 and 2024 at a referral center in Maranhão, Brazil. Anthropometric variables (BMI, WC, and NC), age, sex, and FIB-4 score were collected. FIB-4 was categorized as follows: <1.3 = low risk; $1.3\text{--}2.67$ = intermediate risk; >2.67 = high risk. Data were analyzed using IBM SPSS Statistics 23 software, applying Spearman's correlation test and the Kruskal–Wallis test to assess associations. This study is part of a research project approved by the Research Ethics Committee (approval no. 5.216.774). **RESULTS:** A total of 206 patients were included in the study, of whom 70 (34%) were male and 136 (66%) were female. The mean age was 55.5 years. Regarding anthropometric measures, the mean BMI was 32.26 kg/m^2 , the mean WC was 103.5 cm, and the mean NC was 37.5 cm. Spearman's test showed a significant correlation between BMI and FIB-4 ($p = 0.033$). However, no significant associations were observed with NC ($p = 0.15$) or WC ($p = 0.464$). FIB-4 categorization indicated that 159 patients had low risk, 43 had intermediate risk, and 4 had high risk. Finally, a significant correlation was found between BMI and FIB-4 categories ($p = 0.045$) in the Kruskal–Wallis test, while NC ($p = 0.995$) and WC ($p = 0.375$) showed no such association. **CONCLUSION:** The results show that BMI is associated with the risk of hepatic fibrosis, whereas WC and NC did not demonstrate a significant association. Therefore, BMI may be considered a more reliable marker than WC and NC for identifying the risk of hepatic fibrosis in the studied population.

16. EFFICACY AND SAFETY OF METFORMIN IN THE TREATMENT OF GESTATIONAL DIABETES MELLITUS: A SYSTEMATIC LITERATURE REVIEW

Lara Luiza Pitombeira Rocha¹, Filipe Rainan Costa Silva¹ and Martha Lourdes Rêgo Paula¹

¹ Federal University of Maranhão

INTRODUCTION: Gestational diabetes mellitus (GDM) is associated with obstetric and neonatal complications when not treated appropriately. In cases of GDM uncontrolled by diet, the gold standard treatment is insulin therapy. However, the literature suggests metformin as an alternative with similar results to insulin, although it has not yet been established as a first-line therapy. Therefore, it is essential to understand and summarize the efficacy, safety, and impact of metformin in the treatment of GDM, compared to other therapeutic approaches. **OBJECTIVE:** To evaluate glycemic control and maternal and neonatal outcomes during pregnancy, at term, and up to 12 weeks postpartum in women treated for GDM with metformin, compared with placebo, diet, insulin, or combination therapy. **METHODS:** This is a systematic literature review conducted using the PubMed and Virtual Health Library (VHL) databases. The descriptors "Pregnancy," "Diabetes, Gestational," and "Metformin" were used, combined with the Boolean operator "AND," and limited

to original articles published between 2020 and 2025, in English or Portuguese. Of a total of 55 selected articles, 10 were included and 45 were excluded for not meeting the study objective or for being duplicates across databases. **RESULTS:** Most studies concluded that metformin provided adequate glycemic control similar to insulin, delaying the need for insulin therapy, but lacked benefits as a preventative treatment for diet-controlled GDM. Regarding maternal and neonatal outcomes, studies associated metformin with lower rates of maternal and neonatal hypoglycemia and lower maternal weight gain and birth weight, but there was no consensus regarding the rates of small or large for gestational age infants. Furthermore, studies reported good therapeutic adherence to metformin treatment. Finally, there were no significant differences in the rates of hypertensive disorders of pregnancy, neonatal intensive care unit admission, fetal macrosomia, or mode of delivery. **CONCLUSION:** The literature suggests that metformin may be a safe and effective alternative to first-line insulin therapy in GDM not controlled by diet, and may be associated with lower maternal weight gain, lower birth weight, and lower rates of maternal and neonatal hypoglycemia. However, further studies are needed to better elucidate the outcomes associated with metformin, especially in the long-term postpartum period.

17. EVALUATION OF THE PSYCHOSOCIAL IMPACTS OF AESTHETIC AND REPARATIVE SURGERIES: QUALITY OF LIFE, SELF-IMAGE AND MENTAL HEALTH

Victoria de Jesus Martins Fonsêca¹, Diogo Zeque Bastos¹, Giovanna Maria Matos Trabulsi¹, João Octávio Carvalho Souza¹, Linda Simão Marques¹, Vitor Chaves Vanderlei¹, and Thiago Arôso Mendes de Araújo¹.

¹ CEUMA University

INTRODUCTION: The growing appreciation for body aesthetics, intensified by social media, has transformed plastic surgery into instruments of personal reinvention. Brazil ranks among the countries with the highest number of cosmetic procedures, many motivated by unrealistic beauty standards disseminated digitally. This pursuit has profound psychosocial implications, such as low self-esteem and anxiety, and can be exacerbated by pathologies such as Body Dysmorphic Disorder (BDD). Therefore, this study aimed to evaluate the psychosocial impacts of cosmetic and reconstructive surgeries, focusing on quality of life, self-image, and mental health, analyzing the influence of social media, psychiatric disorders, and factors that motivate the decision to undergo procedures. **METHODOLOGY:** An integrative literature review was conducted based on the PICO model. The search was conducted in the PubMed and LILACS databases between 2015 and 2025, using descriptors related to cosmetic surgery, mental health, and social media. Twelve original, qualitative, descriptive, and cross-sectional studies were included. The themes found were divided into: the influence of social media, the presence of mental disorders (especially BDD), self-esteem, and medical ethics. **RESULTS:** Social media directly influences the decision to undergo plastic surgery, and patients with BDD have high rates of dissatisfaction even after surgery. Aesthetic motivation predominated among women, those aged 18 to 30, and those with higher socioeconomic status. It was noted that medical practice with rigorous screening, attention to expectations, and ethical behavior are essential given the psychosocial risks involved. **CONCLUSION:** Cosmetic surgeries, although potentially beneficial to self-esteem and quality of life, should be understood as complex psychosocial phenomena. Patient and physician decision-making must consider multidimensional aspects. This study revealed the importance of

psychological counseling, ethical protocols, and the mitigating role of medical responsibility for better outcomes in plastic or reconstructive surgery.

18. ANALYSIS OF HOSPITALIZATIONS DUE TO STROKE: AN ECOLOGICAL STUDY IN THE STATE OF MARANHÃO (2015-2024)

Marcela Ferreira Santos¹, Ingrid Rocha Nascimento¹, Daniela Ferreira Santos¹, Ian Jhemes Oliveira Sousa².

¹ Pitágoras College

² Federal University of Piauí

INTRODUCTION: The Cerebrovascular Accident (CVA), commonly known as stroke, is a pathology resulting from an obstructive or hemorrhagic event in the cerebral circulation. It is characterized by an acute neurological dysfunction lasting more than 24 hours and presenting compatible findings on imaging tests. This condition represents a complex and multifactorial neurological emergency, and its incidence ranks among the leading causes of disability and mortality worldwide. **OBJECTIVE:** To assess the temporal trend and compare hospitalizations due to stroke in the state of Maranhão (MA), outlining the epidemiological profile. **METHODS:** This is an ecological and descriptive epidemiological study conducted using data from the Hospital Information System (SIH/SUS). Records of hospitalizations due to stroke in Maranhão (MA) from 2015 to 2024 were included, considering variables such as year of admission, number of hospitalizations, hospitalization rate per 100,000 inhabitants, age group, sex, mortality rate, and type of care. Statistical analysis was performed using Simple Linear Regression and Pearson's test, employing GraphPad Prism software. **RESULTS:** During the evaluated period, a total of 49,604 hospitalizations due to stroke were recorded in Maranhão (MA). Simple linear regression analysis indicated an increasing trend in hospitalization rates, with an average annual rise of 5.42 hospitalizations per 100,000 inhabitants ($p < 0.01$, $R = 0.78$, $\beta_1 = 5.42 \pm 1.46$), reaching a peak in 2023 with a maximum rate of 88.62 per 100,000 inhabitants. Correlation between age group and hospitalizations revealed a strong positive association ($r = 0.95$, $p < 0.01$), indicating that hospitalizations increase significantly with advancing age. Regarding sex, there was a slight predominance of male hospitalizations ($n = 26,325$; 53.06%) compared to female hospitalizations ($n = 23,279$; 46.94%). **CONCLUSION:** Data analysis demonstrates an increasing trend in stroke hospitalizations in Maranhão, particularly among the elderly population. These findings suggest potential factors such as shortcomings in preventive measures, increased population longevity, or greater exposure to risk factors. This scenario underscores the need for the implementation of effective health strategies focused on the prevention and control of stroke, aiming to minimize the associated social and economic burdens.

19. NUTRITIONAL IMPACTS OF BARIATRIC SURGERY: CLINICAL REFLECTIONS FROM AN INTEGRATIVE REVIEW

Paola Perusso¹, Vinicius Gabriel Lima Lopes¹, Laila Maria Correia Cronemberger¹ and Janaína Borges Silveira Lima¹.

¹ Faculty of Medicine Pitágoras Bacabal.

INTRODUCTION: Severe obesity has grown alarmingly on the world stage and today represents one of the greatest public health challenges. In this context, bariatric surgery emerges as a consolidated therapeutic alternative, offering significant weight reduction and improvement of comorbidities such as type 2 diabetes, hypertension and sleep apnea. However, despite the benefits, the

procedure leads to structural changes in the gastrointestinal tract that directly affect the absorption of essential nutrients, requiring continuous and multidisciplinary nutritional attention. **OBJECTIVE:** This study aimed to analyze the main effects of bariatric surgery on the nutritional status of adult patients through an integrative literature review covering publications from 2020 to 2024. **METHODS:** The search was conducted in the PubMed, SciELO, and LILACS databases, using the descriptors "bariatric surgery", "nutritional deficiency", "supplementation", and "intestinal absorption". Studies that reported clinical outcomes and nutritional follow-up strategies after procedures such as Roux-en-Y gastric bypass and vertical sleeve gastrectomy were selected. **RESULTS:** The findings reveal that iron, vitamin B12, vitamin D, folate, calcium, and thiamine deficiencies are recurrent in the postoperative period. These deficiencies are associated with factors such as reduced gastric acidity, exclusion of segments of the small intestine, low dietary intake, and poor adherence to supplementation routines. The consequences may include anemia, overall weakness, impaired bone health, neurological disorders, and an increased risk of fractures. Furthermore, evidence indicates that vulnerable populations — such as pregnant women, older adults, and low-income individuals — face greater challenges in maintaining adequate nutritional management. **CONCLUSION:** This study concludes that the success of bariatric surgery depends not only on the procedure itself, but also on the maintenance of a structured and humanized clinical follow-up. The involvement of a multidisciplinary team, access to specific supplementation, periodic examinations, and continuous patient education are fundamental strategies for preventing nutritional complications and ensuring the sustainability of long-term metabolic benefits.

20. EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH PENILE CANCER IN THE STATE OF MARANHÃO FROM 2019 TO 2023

Edivaldo Coelho Madeira De Sousa Junior¹, Leticia Gabrielle Rebonatto¹, Rebeca Rocha Pinheiro¹, Yasmin Andrade Sampaio¹, Jilmario Gomes De Santana Junior¹, Sarah Raquel Ribeiro Pires¹, and Ana Gabriela Caldas Oliveira¹

¹ Federal University of Maranhão.

INTRODUCTION: Penile malignant neoplasm is a rare type of cancer, with higher incidence among men aged 50 years or older, although it can also affect younger individuals. The disease is associated with poor genital hygiene, human papillomavirus (HPV) infection, and lack of circumcision. In Brazil, penile cancer is more common in the North and Northeast regions, accounting for 2% of all cancer types affecting men. This disease is considered a public health challenge in Maranhão, with the state standing out negatively at both national and international levels. **OBJECTIVE:** To determine the epidemiological profile of penile cancer in Maranhão between the years 2019 and 2023. **METHODS:** This is an epidemiological, retrospective, descriptive study with a quantitative approach, based on data collected from the Department of Informatics of the Unified Health System (DATASUS) regarding the epidemiological profile of patients with penile cancer in Maranhão from 2019 to 2023. The variables analyzed were "incidence," "age group," and "treatment initiation". **RESULTS:** In Maranhão, 187 cases of penile cancer were recorded, corresponding to 11.8% of notifications in the Northeast, with concentration in São Luís (76.5%) and Imperatriz (20.9%), while Caxias (2.1%) and Pinheiro (0.5%) showed lower incidence. Approximately 70% of cases occurred in men over 50 years of age, with the age

groups 60–64 years (12.8%), 65–69 years (12.5%), 55–59 years (12.3%), 70–74 years (10.7%), and ≥80 years (10.7%) standing out. Regarding treatment initiation, 63.1% started within 30 days, 10.7% waited more than 60 days, and 21.4% had no record. **CONCLUSION:** Most cases are reported in the capital, São Luís, a municipality markedly unequal in income distribution and technical-scientific-informational resources. A total of 10.7% of diagnosed patients assuredly began treatment after the 60 days established by the "60-Day Law" for initiation of treatment in oncology patients. The lack of record in 21.4% of cases may indicate difficulties in follow-up and statistical control of patients with this condition, which may have affected the findings observed in the analysis.

21. ANALYSIS OF FACTORS ASSOCIATED WITH TYPE 2 CARDIORENAL SYNDROME IN HOSPITALIZED PATIENTS WITH HEART FAILURE

Maria Júlia de Sena Lopes¹, Daniele Beatriz Almeida da Silva¹, Darlem Sousa Braga¹, Eliosmar da Cruz Filho¹, Mariana Guimarães Rocha¹, Sara Raquel Ribeiro Pires¹, José Albuquerque de Figueiredo Neto¹

¹ Federal University of Maranhão.

INTRODUCTION: Cardiorenal syndrome (CRS) is characterized by dysfunctional interaction between the cardiac and renal systems, in which dysfunction in one system exacerbates impairment in the other. Type 2 CRS occurs when chronic heart failure (HF) causes chronic renal dysfunction. Factors such as Chronic Kidney Disease (CKD) and reduced glomerular filtration rate (GFR) are related to its development. **OBJECTIVE:** Analyze the risk factors for the development of type 2 SCR in patients hospitalized with HF. **METHODS:** This is an observational, longitudinal, quantitative study. Data from patients with HF followed up at a tertiary hospital in Maranhão between 2021 and 2025 were used. The variables analyzed were: estimated GFR (clearance), CKD stage, New York Heart Association (NYHA) functional class, and occurrence of clinical decompensation in 12 months. Statistical analysis was performed using RStudio software. For inferential analysis, Fisher's, Chi-square, and Mann-Whitney tests were applied, considering statistical significance of $p < 0.05$. The study was approved by the Research Ethics Committee (protocol: 25756919.9.2004.5086). **RESULTS:** The sample consisted of 185 patients. Regarding the stage of CKD, 27.57% were in stage 1, 31.35% in stage 2, 36.22% in stage 3, 3.24% in stage 4, and 1.62% in stage 5. Regarding the functional class of HF, 15.14% were NYHA I, 58.39% NYHA II, 21.62% NYHA III, and 4.85% NYHA IV. During the 12-month follow-up, 27.03% ($n = 50$) presented decompensation. There was no statistically significant association between decompensation and CKD stage ($p = 0.333$), functional class ($p = 0.242$), or clearance ($p = 0.927$). There was also no association between CKD stage and HF functional class ($p = 0.143$). Although patients in NYHA classes III/IV had numerically lower GFR than those in classes I/II, this difference was not statistically significant. In addition, the combination of NYHA III/IV with $\text{GFR} < 60 \text{ mL/min/1.73m}^2$ showed no association with increased risk of decompensation in the period analyzed. **CONCLUSION:** Despite the high prevalence of renal changes demonstrated in the study, no significant associations were found between the parameters evaluated and worsening HF. Therefore, although there is no direct association between the risk factors analyzed and the development of type 2 CKD, the findings reinforce the importance of further research on the predictive elements of CKD in the context of HF.

22. TREND OF HOSPITALIZATIONS DUE TO ARTERIAL EMBOLISM AND THROMBOSIS IN MARANHÃO: A REGIONAL OVERVIEW

Ilmarya Barros Pereira, Vitória Leticia Rodrigues Freitas, Maria Elisa França Berniz, Jessikelly Santos Da Silva, Vitória Leticia Rodrigues Freitas, Pedro Lucas Brito Tromps Roxo, And Carlos Alberto Da Silva Frias Neto

INTRODUCTION: In Brazil, more than 300,000 hospital admissions per year are related to peripheral vascular diseases, many of them resulting from arterial thrombotic events. Arterial thrombosis and embolism represent significant causes of amputations and deaths, especially among populations with risk factors such as hypertension, diabetes, and smoking. These events are strongly associated with atherosclerosis and population aging. In Maranhão, there are still gaps regarding the regional distribution of these hospitalizations.

OBJECTIVE: To analyze the trend and regional profile of hospital admissions due to arterial embolism and thrombosis in the state of Maranhão. **METHODS:** This is a cross-sectional, descriptive, and analytical epidemiological study with a quantitative approach, using data from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS), available through the Department of Informatics of the SUS (DATASUS), for the period from 2020 to 2024. All hospitalizations recorded in the state of Maranhão with ICD-10 code I74 — arterial embolism and thrombosis — were included. The variables analyzed were health region, year of hospitalization, gender, and age group, in order to describe the trend of these events.

RESULTS: From 2020 to 2024, a total of 884 hospitalizations for arterial embolism and thrombosis were recorded in the state of Maranhão. A moderate upward trend was observed, increasing from 137 hospitalizations in 2020 to a peak of 204 in 2023, followed by a slight decrease in 2024 (192 hospitalizations). Regionally, hospitalizations were highly concentrated in the São Luís (423; 47.8%) and Imperatriz (351; 39.7%) regions, accounting for nearly 88% of all cases. The remaining regions had significantly lower numbers, with Codó (35 cases), Timon (12), and Pinheiro (12) standing out. Most cases occurred among males (505; 57.1%) and in individuals over 50 years of age (64.6%). **CONCLUSION:** The data reveal an epidemiological pattern concentrated in regions with greater hospital infrastructure, highlighting the need for decentralization and strengthening of vascular care in other regions, especially considering the risk of complications such as amputations and deaths. Furthermore, the predominance of cases among males and older adults reinforces the influence of population aging and the presence of risk factors on the increase in arterial events.

23. PENILE CANCER IN MARANHÃO: HIGH HPV PREVALENCE HIGHLIGHTS VACCINATION CHALLENGES AND THE URGENT NEED FOR PUBLIC HEALTH POLICIES

Luís Felipe Gomes Mota Lima¹, Ana Gabrielly de Melo Matos², and Antonio Augusto Lima Teixeira Júnior¹

¹ Institute of Development and Learning

INTRODUCTION: In Brazil, the state of Maranhão stands out for having the highest incidence rate of penile cancer (PC) in the country and in the world. This has been linked to social vulnerabilities and the high prevalence of human papillomavirus (HPV) infection in the region. **OBJECTIVE:** Given this context, the present study aimed to synthesize available data on HPV infection in penile cancer (PC) cases in Maranhão. **METHODS:** An integrative review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol. Searches were performed in

the PubMed, Scopus, and Web of Science databases using the descriptors "HPV OR Human Papillomavirus" AND "Maranhão" AND "Penile Squamous Cell Carcinoma OR Penile Cancer." Articles that used PCR (Polymerase Chain Reaction) as the HPV detection method were included, while those referring to other locations were excluded. A total of 46 studies were initially identified, and after full-text reading and application of the inclusion criteria, 13 studies remained for data analysis. **RESULTS:** A total of 933 patients were evaluated. The weighted mean age was 61.1 years, with the most common histological subtype being the usual type (53.8%). Cases staged as pT3 (61.5%), with perineural invasion (32.7%), and histological grade G2 (66.6%) were predominant. Approximately 657 patients (70.3%) had HPV data available by PCR, showing a positivity rate of 80.8%, higher than the global average of 58.8%. Genotyping data were available for 289 cases, revealing 83.7% of high-risk oncogenic genotypes, mainly types 16 (70.2%) and 18 (4.2%). The identified high-risk genotypes included 16, 18, 34, 35, 39, 45, 53, 58, 59, 66, 69, and 73, while the low-risk types were 6, 11, 30, 40, 41, 42, 43, 44, and 74. The quadrivalent vaccine provided by the Brazilian public health system (SUS) protects against types 6, 11, 16, and 18, which account for 83.7% of the genotypes identified in penile cancer cases in Maranhão. Nevertheless, data from the state show that only 26% of Maranhão's Health Regions have achieved adequate vaccination coverage ($\geq 80\%$) among boys. Despite the publication of Technical Note No. 5/2024 by the Ministry of Health, which guides Primary Health Care actions in the control of penile cancer, no effective impact on vaccination coverage expansion has been observed in the state. **CONCLUSION:** Penile cancer remains a serious public health challenge in Maranhão, with a high prevalence of HPV-positive tumors. These findings highlight the urgent need to expand vaccination coverage and to develop specific public health policies as preventive measures.

24. DYSLIPIDEMIA PROFILE IN PATIENTS WITH FAMILIAL PARTIAL LIPODYSTROPHY

Osnar Gustavo de Santana Lima¹, Filipe Rainan Costa Silva¹, Lucas Araújo dos Santos¹, Mikaio Carreiro Silva¹, and Rossana Santiago de Sousa¹

¹ Federal University of Maranhão

INTRODUCTION: Lipodystrophies are metabolic syndromes characterized by changes in body fat deposits. They are classified according to the extent of fat loss and the mode of inheritance. Familial partial lipodystrophies (FPL) are rare forms, presenting early-onset dyslipidemia, often diagnosed as metabolic syndrome. Understanding the presentation of dyslipidemias in patients with FPL is essential for proper diagnosis and the implementation of more effective therapeutic approaches. **OBJECTIVE:** To analyze the profile of dyslipidemias manifested in patients with familial partial lipodystrophy. **METHODS:** This is a retrospective study based on the analysis of medical records of patients with familial partial lipodystrophies followed between 2020 and 2025 at a reference center in Maranhão. Variables related to demographic characteristics (age and sex) and dyslipidemias were collected: total cholesterol, HDL cholesterol, LDL cholesterol, and triglycerides. The data were analyzed using IBM SPSS Statistics 23 software, employing the Kruskal-Wallis test to assess associations. This work is part of a study submitted to and approved by the Research Ethics Committee under opinion No. 4.415.776. **RESULTS:** Seventeen patients were included in the study, of whom 16 (94.1%) were female. The mean age of the participants was 44.12 years. Regarding lipid parameters, the mean values were: total cholesterol 205.94 mg/dL (± 68.3), triglycerides 277.29 mg/dL

(± 98.4), LDL-cholesterol 129.18 mg/dL (± 58.2), and HDL-cholesterol 39.29 mg/dL (± 14.9). In the age group stratification, a significant increase in triglycerides (median ~ 270 mg/dL) and LDL (median ~ 130 mg/dL) was observed in the 25-50 years age group. Conversely, the median HDL-cholesterol was lower in the 51-75 years group (about 30 mg/dL) compared to the younger groups. However, no significant differences were found among the three age groups in the mean values of TC ($H=5.017$; $p=0.081$), TG ($H=4.482$; $p=0.106$), LDL ($H=3.929$; $p=0.140$), or HDL ($H=3.664$; $p=0.160$) in the Kruskal-Wallis test. **CONCLUSION:** Analyzing the lipid profile of the patients, it was observed that the averages of total cholesterol, triglycerides, and HDL cholesterol were outside the targets established for the general population, corroborating the characteristic findings of LPF. The limitation of the study is due to the small sample size, explained by the rarity of the disease and the difficult access of patients to genetic diagnosis.

25. PROGNOSTIC VALUE OF B-TYPE NATRIURETIC PEPTIDE IN HEART FAILURE WITH REDUCED EJECTION FRACTION

Mariana Guimarães Rocha¹, Elismar Da Cruz Filho¹, Darlem Sousa Braga¹, Samyra Elouf Dos Santos Simão¹, Sara Raquel Ribeiro Pires¹, Alexia Carolina Freire Silva De Almeida¹, and José Albuquerque De Figueiredo Neto¹.

¹ Federal University of Maranhão

INTRODUCTION: Heart failure with reduced ejection fraction (HFrEF) is a complex and progressive clinical condition associated with high rates of hospitalization and morbidity and mortality. The evaluation of biochemical markers is essential for the appropriate management of the syndrome. In this context, the measurement of B-type natriuretic peptide (BNP), a biomarker associated with left ventricular dysfunction, becomes relevant due to its correlation with the severity and prognosis of the disease. **OBJECTIVE:** To analyze the correlation between serum BNP levels and left ventricular ejection fraction (LVEF), in addition to evaluating its usefulness in predicting clinical decompensation in patients with HFrEF. **METHODS:** This is an observational, longitudinal, and quantitative study conducted with 63 patients diagnosed with HFrEF at a tertiary hospital in Maranhão, between 2021 and 2025. Clinical, laboratory, and functional data were collected, including age, sex, LVEF, NYHA functional class, BNP levels, and clinical decompensation within 12 months. Statistical analysis was performed in RStudio. The correlation between BNP and LVEF was analyzed using Spearman's coefficient (ρ), considering $p < 0.05$ as significant. To evaluate the performance of BNP as a predictor of decompensation, a ROC curve was used, with the area under the curve (AUC) calculated. Research Ethics Committee: 25756919.9.2004.5086. **RESULTS:** The sample consisted of 63 patients: 80.65% male ($n = 50$) and 19.35% female ($n = 13$). The median age was 67 years (range, 32–93 years). The mean LVEF was 34.5%. The median BNP level was 1,497 pg/mL (range, 60–9,000 pg/mL). Regarding functional class, 64.52% of patients were in NYHA II. During follow-up, 32.26% of participants presented decompensation. There was a moderate negative correlation between BNP levels and LVEF ($\rho = -0.31$; $p = 0.01405$), indicating that higher BNP levels were associated with lower ejection fraction. However, the ROC curve demonstrated that BNP alone performed poorly in predicting decompensation, with an AUC of 0.56, close to chance (AUC = 0.5). **CONCLUSION:** The data demonstrate a moderate negative correlation between BNP levels and LVEF, suggesting an association between elevated BNP and greater ventricular dysfunction. However, BNP alone showed low accuracy in

predicting decompensation in this clinical context, indicating the need for integrated assessment with other parameters for better risk stratification in patients with HFrEF.

26. EFFECT OF A PHENOLIC MONOTERPENE ON MYOCARDIAL INJURY MARKERS IN RATS SUBJECTED TO ACUTE MYOCARDIAL INFARCTION

Maria Clara Santos Araujo¹, João Victor Cunha Silva¹, Raphael Furtado Marques¹ and Rachel Melo Ribeiro¹

¹ Federal University of Maranhão

INTRODUCTION: Acute myocardial infarction (AMI) is characterized as a clinical or pathological event resulting from myocardial ischemia, with evidence of cardiac injury. Globally, AMI is the leading cause of death worldwide. Considering the public health impact of this condition, new therapeutic alternatives have been explored to prevent and treat cardiovascular diseases. Monoterpenes exhibit cardioprotective properties due to their anti-inflammatory, antioxidant, vasodilatory, and antihypertensive actions. Furthermore, they may reduce biochemical markers of myocardial injury in animal models. **OBJECTIVE:** To investigate the effect of oral treatment with a phenolic monoterpene on myocardial injury markers in rats subjected to an experimental model of AMI, aiming to scientifically validate its cardioprotective action. **METHODS:** This experimental study (Ethics Committee on Animal Use/UFMA no. 23115.002016/2023-60) used normotensive, healthy, adult male Wistar rats randomly assigned into three groups: Control (untreated; non-induced), ISO (untreated; induced), and M20 (monoterpene 20 mg/kg/day; induced). Animals received a single daily oral dose by gavage for 30 days. AMI was induced via subcutaneous administration of isoproterenol (85 mg/kg). At the end of the protocol, animals were euthanized under anesthesia with ketamine and diazepam. Blood samples were collected for laboratory analyses of lactate dehydrogenase (LDH), creatine kinase-MB (CK-MB), and C-reactive protein (CRP). Results were expressed as mean $\pm$ standard error. Normality was verified by the Shapiro-Wilk test, and intergroup differences were determined using ANOVA followed by Tukey's post hoc test ($p < 0.05$). **RESULTS:** Administration of isoproterenol (ISO) led to a significant increase in biochemical markers of myocardial injury compared with the control group. Serum levels of LDH, CK-MB, and CRP were significantly elevated in the ISO group ($p < 0.05$), confirming the effectiveness of the experimental AMI model. Conversely, animals treated with the monoterpene showed significant reductions in these markers compared with the ISO group ($p < 0.05$). **CONCLUSION:** The monoterpene demonstrated a cardioprotective effect by significantly reducing myocardial injury markers in rats with induced AMI. These findings support its therapeutic potential in preventing cardiac damage.

27. USE OF LSD IN THE TREATMENT OF DEPRESSIVE DISORDERS: AN INTEGRATIVE REVIEW

Mateus Ayrton Barboza de Melo¹, João Pedro Belaglovis Castelo Branco² and Caio José Carvalho Filho¹.

¹ Federal University of Maranhão

INTRODUCTION: Depressive disorders, which are highly prevalent and impact public spending, manifest as persistently low mood, anhedonia, cognitive impairment, and other symptoms that can lead to disability. Thus, lysergic acid diethylamide (LSD), a serotonin 5-hydroxytryptamine 2A (5-HT_{2A}) receptor agonist, is being progressively studied as a potential antidepressant, as it induces biochemical cascades related to neuroplasticity, a central mechanism of conventional antidepressant therapies. **OBJECTIVE:** The study aims

to synthesize, through an integrative review, scientific evidence published between January 2020 and June 2025 on the efficacy and mechanisms of action of LSD in the treatment of depressive disorders.

METHODS: An integrative review of articles from the last five years was conducted in the PubMed and SciELO databases, using structured searches with Boolean operators (AND, OR) combining terms such as "Lysergic Acid Diethylamide" [MeSH], "Depressive Disorder" [MeSH], and similar terms. The initial screening of 42 records resulted in the final inclusion of 15 articles, after excluding duplicates, unrelated articles, isolated case reports, and publications outside the defined period. **RESULTS:** In patients with depression, clinical trials of LSD-assisted psychotherapy have demonstrated substantial reductions in symptoms. In a double-blind study with 12 participants, a single dose of 200µg of LSD significantly reduced scores on the Hospital Anxiety and Depression Scale (HADS-D), an effect maintained for up to 12 months. In parallel, in healthy volunteers, both microdoses of 5 and 20µg and the full dose of 200µg caused acute elevations in plasma levels of Brain-Derived Neurotrophic Factor (BDNF), a neurotrophin crucial for neuronal development and maintenance, while intermediate doses (10–100µg) did not always produce such an increase, suggesting the existence of an optimal dose window. Furthermore, 5-HT_{2A} activation in the prefrontal cortex and anterior cingulate induced synaptogenesis, while repeated doses of LSD promoted intermittent desensitization of the 5-HT_{2A} receptor in the hippocampus, improving learning, cognitive flexibility and reordering ruminative thought patterns. **CONCLUSION:** Evidence suggests that LSD exerts significant antidepressant effects through modulation of the 5-HT_{2A} receptor and stimulation of neuroplasticity. However, larger studies and more robust protocols are needed to demonstrate its clinical applicability.

28. AROMATASE INHIBITORS VS. TAMOXIFEN IN ADJUVANT THERAPY IN POST-MENOPAUSAL WOMEN WITH BREAST CANCER

Isabelle Vitória Rocha da Silva¹, Yasmin Andrade Sampaio¹, Ryan Felipe Almeida Costa¹, Leandro Moreno da Cruz¹, Edivaldo Coelho Madeira de Sousa Júnior¹, Nadylla Glenda Gomes Araújo¹, and Ana Gabriela Caldas Oliveira¹.

¹Federal University of Maranhão

INTRODUCTION: Hormone receptor-positive breast cancer is the most common subtype in postmenopausal women. Since the 1980s, tamoxifen has established itself as the standard adjuvant hormone therapy. However, since 2015, aromatase inhibitors (AIs) have been increasingly compared to tamoxifen in clinical studies, demonstrating distinct efficacy and safety profiles. Evaluating these strategies comparatively is essential to guide evidence-based practices. **OBJECTIVE:** To analyze whether the use of aromatase inhibitors, compared to tamoxifen, improves disease-free survival (DFS) in postmenopausal women with hormone receptor-positive breast cancer. **METHODS:** A systematic review was conducted according to PRISMA 2020, including studies published between 2019 and 2024 in the PubMed, BVS, SciELO, Scopus, and Web of Science databases. DeCS and MeSH descriptors were used in combination with the Boolean operator AND: "Breast Neoplasms" AND "Postmenopause" AND "Tamoxifen" AND "Aromatase Inhibitors" AND "Survival Analysis." Comparative studies between tamoxifen and aromatase inhibitors with the primary outcome of disease-free survival (DFS) were included, covering meta-analyses, randomized clinical trials, and cohort studies. **RESULTS:** After screening 28 articles, 5 were selected. Four studies showed a significant reduction in the risk of recurrence with AI versus tamoxifen, favoring longer DFS: HR 0.51 ($p < 0.05$) in

HER2-negative patients; HR 0.68 ($p < 0.0001$) with upfront use of AI; HR 0.70 ($p < 0.01$) in HER2-positive patients; and HR 0.82 ($p < 0.05$) with prolonged therapy in lymph node-positive patients. An Asian cohort study was not significant (HR 0.84; $p = 0.108$), but showed a favorable trend for AI in patients with low adherence and advanced disease. No study demonstrated a significant gain in overall survival. Articles resulting from the search that presented results for only one type of therapy, or that did not specifically include the target population in the results, were excluded. **CONCLUSION:** It is suggested that aromatase inhibitors may be potentially superior to tamoxifen in disease-free survival in postmenopausal women with hormone receptor-positive breast cancer, especially in higher-risk settings. Different immunohistochemical subgroups may respond differently to the use of different medications, so new studies may be designed.

29. CLINICAL-LABORATORY TARGETS IN NON-DIALYSIS CHRONIC KIDNEY DISEASE: ANALYSIS OF A MULTIDISCIPLINARY OUTPATIENT CLINIC

Mônica Cavalcante Santana¹, Pryscylla Vieira Vezzosi¹, Wesleyanne Soares Santana¹, Juliana Ribeiro Carneiro¹ and Erika Cristina Ribeiro de Lima Carneiro¹

¹Federal University of Maranhão

INTRODUCTION: Chronic kidney disease (CKD) is common, frequently asymptomatic, and without adequate clinical, nutritional, or pharmacological interventions, can lead to progression to advanced stages. Although guidelines exist for clinical and laboratory monitoring and for therapeutic targets, few studies describe the outcomes achieved in CKD outpatient settings. **OBJECTIVE:** This study aimed to determine the proportion of non-dialysis CKD patients who meet recommended clinical and laboratory targets. **METHODS:** The study was conducted in a model multidisciplinary nephrology outpatient clinic and included clinical and laboratory data from 37 patients. Statistical analyses were performed in GraphPad Prism 8, data normality was assessed with the Shapiro-Wilk test and correlations were evaluated using Spearman's and Pearson's tests. This work is part of the research "Analysis of Biopsychosocial Aspects in Interdisciplinary Care at a Model Nephrology Outpatient Clinic," approved by the Ethics Committee (No. 7.195.964). **RESULTS:** The sample had a mean follow-up duration of 7.52 ± 7.1 years and a mean estimated glomerular filtration rate (eGFR) of 34 ± 15 mL/min, with most patients in stages 3B (51.3%) and 4 (32.4%). Clinic systolic blood pressure exceeded 130 mmHg in 36.8% of patients, and 31.5% had a body mass index >30 kg/m². Regarding lipids, 26.3% had LDL cholesterol >100 mg/dL despite statin therapy, and 44.7% had triglycerides >150 mg/dL. Hyperkalemia ($K^+ >5.3$ mEq/L) occurred in 10.5% and hemoglobin <10 g/dL in 13.6%, and neither of those parameters correlated with eGFR, highlighting the need for monitoring across all disease stages. In terms of mineral and bone metabolism, 43.7% of patients had parathyroid hormone (PTH) levels two to three times the reference value, 60.5% had serum phosphorus >3.5 mg/dL, and 12% had serum calcium <8.5 mg/dL. These findings reflect reduced phosphaturia as CKD progresses and a consequent rise in PTH, which correlated negatively with eGFR ($r = -0.67$; $p < 0.001$). Control of serum phosphorus with phosphate binders is important, yet these agents are often unavailable in the Brazilian public health system. Metabolic acidosis, defined as bicarbonate <22 mEq/L, was present in 42.1% of patients, oral bicarbonate was prescribed, but the medication adherence is limited by poor palatability. **CONCLUSION:** In conclusion, despite long-term multidisciplinary follow-up, achieving therapeutic targets in non-

dialysis CKD remains challenging, particularly due to issues regarding medication adherence.

30. CORRELATION BETWEEN FERRITIN AND FIBROSIS-4 SCORE: FERRITIN AS A POTENTIAL COMPLEMENTARY MARKER FOR HEPATIC FIBROSIS

Samuel Lemos Mesquita¹, Mikaio Carreiro Silva¹, Lucas Araújo dos Santos¹, Maria Beatriz Soares Vieira¹, Osnar Gustavo de Santana Lima¹ and Rossana Santiago de Sousa Azulay¹

¹Federal University of Maranhão

INTRODUCTION: Metabolic Hepatic Steatosis (MHS) is one of the main causes of liver fibrosis and hepatocellular carcinoma (HCC). Moreover, its prevalence among individuals with type 2 diabetes mellitus (T2DM) is high, reaching 63.7% in this group. The Fibrosis-4 (FIB-4) Score is a well-established, low-cost tool for estimating the risk of liver fibrosis. In the search for other possible complementary markers for fibrosis risk, the measurement of serum ferritin—a marker of iron overload and inflammation—has been considered as a low-cost method independent of age range. **OBJECTIVE:** To evaluate ferritin as a marker of liver fibrosis by correlating it with FIB-4 in patients with T2DM and MHS. **METHODS:** This is a retrospective study approved by the ethics and research committee under number 5,216,774, based on the analysis of medical records of patients with T2DM and MHS followed between 2022 and 2024 at a reference center in Maranhão. Data related to patient age, sex, ferritin levels, and FIB-4 scores were collected. Patients with high alcohol consumption (>30g/day for men and >20g/day for women) and those with other causes of liver disease (viral hepatitis, drug-induced hepatotoxicity, among others) were excluded. To categorize patients by their risk of liver fibrosis using FIB-4, the following cutoff values were used: <1.30 = low risk; 1.30-2.67 = indeterminate risk; >2.67 = high risk. Data were analyzed using IBM SPSS Statistics 23 software, employing Spearman's correlation test and the Kruskal-Wallis test to assess associations. **RESULTS:** A total of 209 patients were included, 71 male and 138 female (66%), with a mean age of 55.5 years and an age range of 35 to 65 years. The mean ferritin level was 174.87 ng/mL, and the mean FIB-4 score was 1.04. Using Spearman's test, no significant relationship was found between FIB-4 values and ferritin levels ($p = 0.170$). Of these patients, 161 were classified as low risk, 43 as intermediate risk, and 5 as high risk for liver fibrosis. When comparing these risk groups with ferritin values, the relationship approached, but did not reach, statistical significance ($p = 0.062$) in the Kruskal-Wallis test. **CONCLUSION:** No significant correlation was found between ferritin levels and FIB-4 scores. However, the relationship was close to the confidence interval, justifying further studies with more representative samples, especially including patients with higher FIB-4 scores.

31. MORTALITY TREND OF DIABETES MELLITUS IN MARANHÃO, 2015-2023

Anna Victória Marques Sousa Pirajá¹, Maria Beatriz Soares Vieira¹, Mayara Regina Fontinele Rocha¹, Mikaio Carreiro Silva¹ and Rossana Santiago de Sousa Azulay¹

¹ Federal University of Maranhão

INTRODUCTION: Diabetes Mellitus (DM) is a chronic disease characterized by a deficiency in pancreatic insulin production or resistance to the action of this hormone, resulting in hyperglycemia. In 2023, more than 1.5 million patients with DM were registered in the Primary Care Information System in the state of Maranhão. Furthermore, in the same year, there were more than 3,000

hospitalizations for DM in the state. This fact highlights that the condition results in multiple acute and chronic complications, increasing the individual's risk of mortality, such as coronary artery disease, chronic kidney disease, diabetic neuropathy, diabetic retinopathy, stroke and peripheral arterial disease. **OBJECTIVE:** To analyze DM mortality trends in Maranhão and Brazil from 2015 to 2023. **METHODS:** A retrospective, analytical, time-series study was conducted using data from the Mortality Information System (SIM) regarding DM as a cause of death from 2015 to 2023. Mortality rates were calculated and the annual percentage change (APC) was calculated using Joinpoint regression analysis software to determine trends. **RESULTS:** The DM mortality rate in Brazil was 29.17/100,000 inhabitants in 2015 to 34.65/100,000 inhabitants in 2023. In Maranhão, the rate was 34.20/100,000 inhabitants in 2015 to 37.01/100,000 inhabitants in 2023. Between 2015 and 2021, in Brazil, an APC of +4.29% was observed, indicating an increase in the mortality rate compared to the previous year. From 2021 onwards, an inflection point was analyzed, the trend reversed, reaching an APC of -1.47%. A similar pattern was observed in Maranhão. From 2015 to 2020, the APC was +5.43%, with a significant increase in mortality. Meanwhile, from 2020 to 2023, there was a decrease, represented by an APC of -2.95%. **CONCLUSION:** Data analysis demonstrates an increase in DM death rates in both Brazil and Maranhão in the initial years of the study period. After 2020 and 2021, the pattern changed, with rates declining. Thus, although Maranhão started with higher rates, the intensity of the decline was greater than that observed nationally, indicating relative progress in controlling diabetes mortality. Therefore, monitoring and assessing DM mortality are important to improve healthcare for the diabetic population.

32. NEONATAL MANAGEMENT IN DELIVERIES OF WOMEN LIVING WITH HIV: AN INTEGRATIVE REVIEW OF THE LITERATURE.

Jéssica Cristine da Silva Conceição¹, Lara Luíza Pitombeira Rocha¹, Jeefferson Cordeiro de Melo¹, Kellen de Jesus Farias da Luz¹ and Mônica Elionor Alves Gama¹.

¹Federal University of Maranhão

INTRODUCTION: In Brazil, between 2000 and 2022, more than 54,000 children were reported as exposed to HIV, with vertical transmission of the human immunodeficiency virus (HIV) remaining the primary route of neonatal and childhood infection, particularly among middle- and low-income populations. Despite significant advances in antiretroviral therapy (ART), challenges persist in implementing effective neonatal management and ensuring adherence to clinical protocols. **OBJECTIVE:** To synthesize and critically analyze the main scientific evidence on neonatal management in deliveries of women living with HIV, with a focus on antiretroviral prophylaxis, breastfeeding practices, and emerging therapeutic strategies. **METHODS:** An integrative literature review was conducted using the PubMed and Virtual Health Library (BVS) databases. The descriptors "HIV infections," "Infectious Disease Transmission, Vertical," and "Perinatal Care" were combined with the Boolean operator "AND." The inclusion criteria comprised articles published between 2020 and 2025 in English or Portuguese. From a total of 137 retrieved studies, 10 met the eligibility criteria, while 127 were excluded due to duplication or lack of relevance to the study objectives. **RESULTS:** The reviewed studies demonstrated notable progress in neonatal HIV care, including the incorporation of newer antiretrovirals such as Dolutegravir and Raltegravir, the application of innovative tools like the Pratt Pouch, and the conditional recommendation of breastfeeding when maternal viral load is

undetectable. However, persistent gaps were identified in maternal adherence to ART and in the standardization of neonatal clinical management across healthcare settings. Delayed initiation of antiretroviral regimens during pregnancy was strongly associated with higher risks of vertical transmission. Additionally, socioeconomic disparities influenced prophylactic decisions, as the cost of infant formula limited access in low-income populations, and HIV-exposed neonates—regardless of infection status—showed an increased risk of nutritional deficits affecting child development. **CONCLUSION:** Neonatal management in deliveries of women living with HIV requires integrated strategies encompassing timely initiation of ART, effective prophylaxis, informed decision-making on breastfeeding, and a humanized approach to ensure continuous follow-up of HIV-exposed infants. Strengthening adherence and harmonizing clinical practices are essential to further reduce vertical transmission rates and promote equitable neonatal health outcomes.

33. PROFILE OF PNEUMONIA MORTALITY AMONG CHILDREN UNDER FIVE YEARS OF AGE IN BRAZIL (2015–2023).

Jéssica Cristine da Silva Conceição¹, Lara Luiza Pitombeira Rocha¹ and Mônica Elionor Alves Gama¹.

¹ Federal University of Maranhão

INTRODUCTION: Pneumonia remains one of the leading causes of mortality among children under five years of age, particularly in developing countries, accounting for approximately 20% of deaths in this group worldwide. Although Brazil has made significant progress in reducing child mortality over recent decades, deaths due to pneumonia still represent a major public health challenge. Understanding the epidemiological profile of these deaths over time is crucial to guide more effective prevention and care policies. **OBJECTIVE:** To analyze the epidemiological profile of mortality due to pneumonia among children under five years of age in Brazil from 2015 to 2023. **METHODS:** This was an epidemiological, retrospective, descriptive, and quantitative study. Mortality data were obtained from the Department of Informatics of the Brazilian Unified Health System (DATASUS) regarding deaths caused by pneumonia in children under five years old between 2015 and 2023. The analyzed variables included year, age group, sex, race/skin color, geographic region of occurrence, and ICD-10 category. **RESULTS:** During the study period, 15,272 deaths from pneumonia were recorded among children under five in Brazil. A 45.5% reduction was observed in the mean number of deaths during 2020–2021 ($\bar{x} = 1,028.5$) compared to other years ($\bar{x} = 1,887$). According to ICD-10 classification, unspecified pneumonia (J18) was predominant ($n = 10,087$; 66.0%), followed by congenital pneumonia (P23; 15.5%) and bacterial pneumonia not elsewhere classified (J15; 15.0%). Most deaths occurred among mixed-race (pardo) children (49.2%), infants under one year of age (65.1%), and residents of the Southeast (31.4%) and Northeast (30.5%) regions. Regarding sex, 53.5% of deaths occurred among males. The state of São Paulo recorded the highest number of deaths ($n = 2,316$; 15.1% of the total), followed by Maranhão with 754 deaths (4.9%), of which 34.3% occurred in the metropolitan region of Greater São Luís. **CONCLUSION:** Mortality from pneumonia among Brazilian children under five years of age was concentrated among mixed-race, male infants younger than one year, with the highest numbers in the Southeast and Northeast regions and a predominance of unspecified bacterial pneumonia. The marked decrease in reported cases during 2020 and 2021 may be related to the impact of public health measures and the underreporting of health events during the critical phase of the COVID-19 pandemic.

34. THE ROLE OF WOMEN'S SUPPORT NETWORKS IN THE PREGNANCY-PUERPERAL CYCLE DURING THE PANDEMIC

Kellen De Jesus Farias Da Luz¹, and Zeni Carvalho Lamy².

¹ Federal University of Maranhão

INTRODUCTION: The COVID-19 pandemic has imposed significant challenges on vulnerable populations, especially women in the pregnancy-puerperal cycle. Social distancing measures, fear of infection, and the overload of health services directly affected the formation and maintenance of support networks, which are essential for physical, emotional, and social well-being during pregnancy and the postpartum period. **OBJECTIVE:** The study aims to analyze the structure and dynamics of support networks among women in the pregnancy-puerperal cycle during the COVID-19 pandemic, with an emphasis on personal and institutional support networks, identifying the challenges faced and the strategies adopted for their preservation in the context of a health crisis. **METHODS:** Qualitative study conducted with pregnant and postpartum women diagnosed with COVID-19, who were assisted in high-complexity maternity hospitals in the state of Maranhão, between November 2020 and May 2021. Data collection was carried out through structured and semi-structured interviews, conducted both in person and remotely. The interviews were subjected to thematic analysis. The research was approved by the Research Ethics Committee of HUUFMA (CAAE No. 35645120.9.0000.5086), in accordance with Resolution No. 466/12 of the Brazilian National Health Council. **RESULTS:** Family support networks showed significant weaknesses, mainly due to the distancing of relatives belonging to risk groups, such as mothers and grandmothers. There was an intensification of dependence on cohabitants and greater use of digital technologies as a strategy to maintain emotional bonds. Spirituality also emerged as a coping resource in the face of the uncertainties and fears imposed by the pandemic context. At the institutional level, healthcare professionals emerged as central agents of emotional support, with emphasis on empathetic and welcoming attitudes, identified by participants as fundamental in mitigating anxiety and fear. **CONCLUSION:** The study evidenced that, during the pandemic, both personal and institutional support networks were fundamental for coping with the pregnancy-puerperal cycle. However, the challenges imposed by social distancing and the overload of health services require the strengthening of these networks, with an emphasis on intersectoral, integrated, and humanized approaches, especially in contexts of health emergencies.

35. MATERNAL MORTALITY AMONG INDIGENOUS WOMEN IN MARANHÃO OVER THE LAST 8 YEARS: AN EPIDEMIOLOGICAL STUDY

Larissa Da Silva Teixeira¹, Bianca Albuquerque De Sousa¹, Juliana De Oliveira Lima¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, Maria Karolina Ferreira Da Silva², and Antonia Mauryane Lopes¹.

¹ Pitagoras College of Bacabal

² Florence University Center

INTRODUCTION: Maternal mortality is a serious public health problem, and a sensitive indicator of social inequalities and the quality of women's healthcare. In Brazil, despite advances in obstetric care, indigenous populations still face higher risks of death during pregnancy, childbirth, and the postpartum period. Maranhão, due to its large indigenous population, exhibits limitations in access to specialized services, making it a target territory for investigating

health inequalities **OBJECTIVE:** In this sense, the present study aims to evaluate the maternal mortality of indigenous women in Maranhão who were hospitalized in the last eight years. **METHODS:** This is an epidemiological, descriptive, and retrospective study using secondary data from the Mortality Information System (SIM), considering maternal deaths registered between 2015 and 2023, identified by the International Classification of Diseases (ICD-10) codes O00 to O99. Variables such as race/color, marital status, and education level were analyzed. **RESULTS:** A total of 953 deaths were recorded, of which 2.4% occurred among indigenous women. The annual average was 2.5 deaths among indigenous women, indicating a proportionally higher rate in relation to their smaller population. Regarding the sociodemographic profile, 43% were single, 26% married, and 8.7% widowed. Furthermore, education revealed significant vulnerability: 21.7% had no formal education and 26% had 1 to 3 years of schooling. None had 12 years or more of schooling. In contrast, among non-indigenous women, 76% had between 8 and 11 years of schooling, indicating a significant educational disparity associated with maternal deaths. **CONCLUSION:** The higher proportion of low educational attainment and lower registration of defined marital status among Indigenous people suggests greater social vulnerability and possible failures in obstetric care. The absence of Indigenous people with complete secondary education reinforces education as a determinant of health. Even with a lower absolute number of deaths, the high proportional rate points to structural inequalities in access to and quality of healthcare. The limitations of the study may be related to underreporting of cases, the culture of childbirth in the community, and the failure to collect the race indicator in the registration system. It is necessary to reinforce the urgency of specific and intercultural strategies in the health care of Indigenous women, focusing on health education and knowledge of the social factors that impact mortality rates.

36. ANALYSIS OF THE COMPONENTS OF A MEDICATION ADHERENCE QUESTIONNAIRE IN NON-DIALYTIC CHRONIC KIDNEY PATIENTS

Pryscylla Veira Vezzosi¹, Mônica Cavalcante Santana¹, Wesleyanne Soares Santana¹ and Laine Cortês Albuquerque¹

¹ Federal University of Maranhão.

INTRODUCTION: Adherence to medication treatment is essential for adequate control of chronic diseases and constitutes an important pillar for the management of Chronic Kidney Disease (CKD), a complex clinical condition that significantly impacts patients' quality of life. There is a wide range of instruments available to assess medication adherence, but the "Adherence to Refills and Medications Scale" (ARMS) questionnaire is especially useful for patients with chronic diseases and low levels of education. It has a published version in Portuguese, is short, and can be administered by everyone on the multidisciplinary team. **OBJECTIVE:** This study sought to evaluate adherence to drug therapy in non-dialysis chronic kidney patients receiving outpatient care at a multidisciplinary outpatient clinic. **METHODS:** The study methodology involved administering the ARMS questionnaire in a model nephrology outpatient clinic. The questionnaire is part of the research project "Analysis of Biopsychosocial Aspects in Interdisciplinary Care in a Model Nephrology Outpatient Clinic," under Ethics Committee approval number 7,195,964. This study involved the analysis of 37 patients with CKD stages 3 to 5. **RESULTS:** Medication adherence was considered good, with a mean score on the Medication Adherence Scale of 15.8 ± 1.6. The majority (78.3%) of patients do not go to the pharmacy

before their medications run out; 35.1% forget to take their medications; 21.3% let their medications run out; and 18.9% report not picking up their medications at the pharmacy due to the high cost. The overall analysis demonstrates adequate medication adherence. However, analyzing the variables separately reveals that most do not plan to purchase their continuous-use medications before they run out, which may be a factor in not achieving therapeutic goals. It was noted that one-third of patients forget to take their medications, and one-fifth report not taking them due to the high cost. For these patients, the intervals between appointments were reduced, and special attention was given to the identified components, with intervention from nursing, social work, and psychology. Other future strategies can be implemented, such as alarms, text messages, and periodic teleconsultations, to ensure better adherence to treatment. **CONCLUSION:** Identifying the factors that individually influence medication adherence provides comprehensive and individualized care for patients with CKD.

37. SOCIOSTRUCTURAL INEQUALITIES AND CLINICAL-BEHAVIORAL RISK FACTORS IN THE MPOX EPIDEMIC IN BRAZIL IN 2024

Maria Stephany Costa Soares¹, João Guilherme Furtado Sobrinho¹, João Pedro Belaglovis¹, José Nória Filho¹, Mateus Ayrton Barboza de Melo¹, Yasmim Leal Miranda¹ and Luz Marina Gomez Gomez².

¹ Federal University of Maranhão.

² National University of Colombia – Medellín Campus.

INTRODUCTION: The spread of Mpox in Brazil is worsened by limitations in epidemiological surveillance, underreporting of cases, and inequalities in access to diagnosis, treatment, and prevention, especially in peripheral regions. The overload of the Unified Health System (SUS), combined with the shortage of vaccines and antivirals, compromises an effective response to the disease. Furthermore, sociobehavioral factors, such as stigma directed toward certain groups and hesitation to seek medical care, contribute to delays in diagnosis and reporting, expanding transmission chains. **OBJECTIVE:** This study aims to understand the main factors associated with the severity of Mpox in Brazil in 2024 by describing the sociodemographic, clinical, and behavioral profile of reported cases in the country. **METHODS:** This is a descriptive, observational, and retrospective study based on data from SINAN (Information System for Notifiable Diseases) for the year 2024. Variables such as sex, age, race, region, hospitalizations, presence of HIV, immunosuppression, and sexual behavior were analyzed. Descriptive analyses were conducted using R software (version 4.4.2). **RESULTS:** Of the 1,915 reported cases, 96.2% were laboratory confirmed. Most were male (94.8%), with a median age of 33 years (IQR = 28–39). The Southeast region accounted for 74.7% of the records, possibly reflecting both its population density and greater access to testing. The distribution by race/color was proportional to regional demographics. Regarding sexual behavior, 70% reported having sex with men, suggesting the role of men who have sex with men (MSM) networks in the transmission dynamics. The hospitalization rate was higher among people living with HIV (5.7%) compared to HIV-negative individuals (4.7%), and even higher among immunosuppressed patients (12.5%) compared to immunocompetent ones (4.1%). **CONCLUSION:** The results provide a relevant overview of the factors associated with Mpox in Brazil and may guide more targeted and equitable public health policies. Future research may explore potential viral variants, long-term consequences, and the effectiveness of therapeutic protocols in different risk groups.

38. EPIDEMIOLOGICAL ANALYSIS OF THE INCIDENCE OF CEREBROVASCULAR ACCIDENT IN YOUNG PEOPLE IN BRAZIL FROM 2015 TO 2024Mateus Ayrton Barboza de Melo¹, Ana Clara Carvalho Barroso², and Bráulio Galdino de Araújo¹.¹ Federal University of Maranhão.

INTRODUCTION: Cerebrovascular accident is a condition resulting from the obstruction or rupture of blood vessels that supply blood to the brain. It causes symptoms such as paresthesia, headache, and visual and cognitive changes. Furthermore, it is one of the leading causes of disability, hospitalizations and death in Brazil. **OBJECTIVE:** Therefore, this study aims to analyze the number of hospitalizations and the epidemiological profile of young stroke patients in Brazil over the past 10 years. **METHODS:** This is a quantitative, descriptive, retrospective, and longitudinal ecological study based on data from the SUS Hospital Information System (SIH/SUS), available at the Department of Informatics of the Unified Health System (DATASUS). The sample consisted of young people aged 15 to 29 years hospitalized for stroke in Brazil between January 2015 and December 2024. The variables used were: year of treatment, age, sex, race, region of residence, and deaths. Time trend analysis was performed using simple linear regression in statistical software (JASP). **RESULTS:** During the analyzed period, there were 1,867,060 hospitalizations for stroke in Brazil. Of these, 26,201 occurred in young individuals aged 15 to 29 years, with a fatality rate of 7.49%, being higher in men (8.99%) than in women (6.28%). The Southeast region concentrated the largest number of cases (35.9%, n = 9,426), followed by the Northeast region (31.2%, n = 8,207). Concomitantly, the majority of patients hospitalized for stroke were brown (44.17%, n = 11,574), women (55.36%, n = 14,505) and were aged between 20 and 29 years (81.56%, n = 21,371). Time trend analysis revealed a statistically significant increase in the incidence of stroke among young people during the study period ($\beta = 30.83$; $p < 0.001$). **CONCLUSION:** The analysis revealed a significant increase in the incidence of stroke among young Brazilians over the past 10 years, with a higher incidence among women, individuals of mixed race, residents of the Southeast region, and those aged 20 to 29. The fatality rate was significant, especially among men, highlighting the need for specific prevention and care strategies for this age group.

39. SLEEP DISORDERS IN PARKINSON'S DISEASE: RELATIONSHIP WITH PROGRESSION AND NEURODEGENERATIONDaniela Rodrigues de Sá¹, Ana Luiza Sousa Ricci¹, Erik Lucas Silva de Sousa¹, Gabriella de Jesus Machado Santos¹, Raquel Vilanova Araújo²¹ State University of Maranhão.

INTRODUCTION: Parkinson's disease (PD) is a neurodegenerative disorder in which some disturbances, such as REM Sleep Behavior Disorder (RBD), are correlated with its progression. Among the significant related changes, the impairment of the glymphatic system stands out. This system acts as a powerful eliminator of metabolic waste products in the brain—equivalent to the lymphatic system in the rest of the body—and the accumulation of α -synuclein, a protein involved in neurotransmitter transport, further intensifying neurodegeneration. **OBJECTIVE:** To elucidate how sleep disorders influence the progression of PD and to assess emerging therapeutic strategies. **METHODOLOGY:** This is an integrative review that investigated the relationship between sleep disorders and the progression of Parkinson's disease. The search was conducted in July

2025 in the PubMed and Cochrane Library databases, using free descriptors combined with Boolean operators. Studies published between 2020 and 2025 in English, Portuguese, and Spanish with full-text access were included. After screening, studies addressing the mechanisms by which sleep disorders, especially RBD, influence neurodegenerative progression were selected. **RESULTS:** The studies show that sleep disorders are linked to the accelerated progression of Parkinson's disease, particularly in cases with RBD. In addition to the aforementioned α -synuclein accumulation, glymphatic dysfunction, and inflammation, conditions such as sleep apnea and insomnia also contribute to the worsening of motor symptoms, as they are associated with sleep fragmentation and hypoxia, aggravating neuronal degeneration. Furthermore, factors such as sex, advanced age, and the presence of severe non-motor symptoms influence this process. Thus, early screening and management of sleep disorders emerge as promising strategies to slow disease progression and preserve quality of life. **CONCLUSION:** The recognition of sleep disorders as modulators of Parkinson's disease progression represents an important advancement in the approach to this condition. Therefore, the emphasis on early diagnosis and appropriate treatment of these disorders may not only help delay neurodegeneration but also improve patients' quality of life. Integrating sleep care into public health strategies and clinical practice is essential to promote more effective interventions and reduce the functional and social impact of the disease.

40. PULMONARY TUBERCULOSIS IN MARANHÃO (2020–2024): EPIDEMIOLOGICAL PROFILE, MORTALITY, AND CLINICAL OUTCOMEYasminn de Siqueira Ripardo¹, Mariana Martins Fernandes Paiva¹, and Phelipe Austriaco Teixeira¹.¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Pulmonary tuberculosis (PTB) remains one of the leading causes of death from infectious diseases in Brazil, reflecting social inequalities and weaknesses in the control of community transmission. Since 2021, a continuous increase in notifications has been observed, with an upward trend persisting through 2024. In Maranhão, this pattern is repeated, with cumulative increases of 11.6% in 2022, 6.5% in 2023, and 0.7% in 2024. Although the annual growth rate has slowed, the absolute number of diagnoses continues to rise. **OBJECTIVE:** This study aimed to characterize the evolution of pulmonary tuberculosis in Maranhão between 2020 and 2024, focusing on early mortality and weaknesses associated with clinical outcomes. **METHODS:** This is an observational, descriptive, and quantitative study based on secondary data from the Notifiable Diseases Information System (SINAN), extracted through TabNet/DATASUS. The variables analyzed included age group, sex, race/color, type of case entry, and closure status. **RESULTS:** In 2024, among the 3,173 reported cases, 72.2% occurred in males, predominantly among individuals aged 20 to 49 years (61.2%). The most common entry type was "new case," with 2,434 notifications (76.7%), followed by 423 reentries after treatment abandonment, 215 relapses, and 30 cases of drug-resistant tuberculosis. The treatment abandonment rate reached 12% (382 cases), including 37 classified as primary abandonment. There were 147 deaths due to PTB in 2024, 64 (44%) of which occurred in individuals under 50 years of age. Additionally, 1,141 cases (35.9%) remained with closure status recorded as ignored or blank. Racial distribution revealed a predominance among mixed-race (71.5%) and Black individuals (14.8%), suggesting intersections between race, socioeconomic status, and clinical vulnerability. This scenario mirrors the national situation: Brazil remains among the 30 countries with the highest tuberculosis burden, according to the World Health Organization (WHO). In Maranhão, high rates of abandonment and reentry increase

the risk of therapeutic failure and resistance. The report of 30 resistant TB cases in the state, combined with relapse and reentry figures, exposes weaknesses in active surveillance and clinical follow-up. **CONCLUSION:** Pulmonary tuberculosis in Maranhão continues to show an upward trend, with significant early mortality and a high proportion of inconclusive records. It is urgent to strengthen active surveillance, expand directly observed therapy (DOT), and improve health record quality, focusing on therapeutic retention, the most vulnerable populations, and the interruption of sustained transmission chains.

41. INCREASE IN TUBERCULOSIS AND HIV COINFECTION CASES IN MARANHÃO IN 2024: EPIDEMIOLOGICAL ANALYSIS AND CLINICAL OUTCOMES

Yasminn de Siqueira Ripardo¹, Mariana Martins Fernandes Paiva¹, and Phelipe Austríaco Teixeira¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Tuberculosis (TB) and HIV coinfection remains one of the major challenges to public health, especially due to its association with high morbidity and mortality rates, treatment abandonment, and contexts marked by social vulnerability. Between 2023 and 2024, Brazil recorded a 17.3% increase in notifications, reflecting a sustained upward trend since 2021. However, the state of Maranhão showed an even more significant rise of 33.3%, from 321 to 428 cases, reinforcing the need to carefully examine the factors driving this increase. **OBJECTIVE:** In light of this scenario, this study aimed to analyze the cases of tuberculosis and HIV coinfection reported in Maranhão throughout 2024, in order to characterize the affected population profile and identify weaknesses in care and surveillance processes. **METHODS:** This is an observational, quantitative, and descriptive study based on secondary data extracted from the Notifiable Diseases Information System (SINAN) through TabNet/DATASUS, covering the period from January to December 2024. All coinfection notifications in the state were included, and the following variables were analyzed: sex, age group, clinical form, type of case entry, and treatment outcome. **RESULTS:** Among the 428 identified cases, 70.1% occurred in males, with adults aged 30 to 49 years representing 59.81%. The pulmonary form of the disease was predominant (92.5%), while isolated extrapulmonary presentations accounted for 6%, and combined forms for 1.4%. Regarding case entry, most were new cases (70.5%), but a considerable proportion represented reentries after treatment abandonment (18.9%). The recorded cure rate was only 17.05%, with treatment abandonment in 16% of cases and outcomes classified as ignored or blank in 34.11%. **CONCLUSION:** The marked increase in HIV/TB coinfection in Maranhão calls for urgent implementation of active surveillance measures, strengthening of primary health care, active case-finding strategies, and integration between notification and care systems. Actions promoting treatment retention, health information quality, and stronger user-service linkage must be prioritized to contain the epidemic's progression and reduce associated morbidity and mortality. The high percentage of unrecorded or blank outcomes (34.11%) underscores the need to improve case monitoring and qualify health information systems.

42. COMPARISON BETWEEN MINIMALLY INVASIVE AND OPEN TECHNIQUES IN LUNG CANCER RESECTION SURGERY

Stefanny Rafaelly Freitas Garcia¹, Alice Beatriz Tomaz Tavares¹, Beatriz Mota Moreno¹, and Thalita Santana Conceição¹.

¹ Federal University of Maranhão

INTRODUCTION: Lung cancer, still responsible for a significant number of deaths, has various determining factors. Among these, cigarette use and environmental elements such as air pollution stand

out. This carcinoma may develop from secondary causes, such as prior therapies or direct exposure to causative agents. Regarding treatment options, surgical intervention is considered the most appropriate approach for the early stages of the disease. **OBJECTIVE:** To analyze the impact of differences between minimally invasive and open surgeries on postoperative complications in lung cancer cases. **METHODS:** This study consists of an integrative review of articles published between 2016 and 2025, sourced from the SciELO, Virtual Health Library (VHL), and PubMed databases. Combined descriptors in both English and Portuguese were used, including ("Pulmonary Neoplasms") AND ("Thoracotomy") and ("Postoperative Complications") AND ("Minimally Invasive Surgical Procedures"). **RESULTS:** A total of ten articles were selected for this review. According to the literature consulted, the main findings regarding minimally invasive surgery (MIS), when compared to open thoracotomy (OT), included shorter hospital stays, reduced estimated blood loss, lower 30-day mortality rates, and increased survival. No significant differences were observed in terms of resection efficacy. However, despite offering less trauma and a broader visual field, MIS presents disadvantages compared to OT, such as indirect tactile feedback, limitations in surgical equipment, and longer procedure duration. Furthermore, pulmonary complications such as subcutaneous emphysema and pleural empyema, with absent or low mortality rates, were associated with MIS. In contrast, OT showed a percentage decrease in postoperative complications but presented the highest estimated mortality rate, with few intraoperative deaths linked to pulmonary artery bleeding, and a predominance of postoperative fatalities. **CONCLUSION:** Both techniques are effective and comparable in terms of resection capability for the treatment of small-cell lung cancer. Nevertheless, they diverge in certain critical aspects, such as survival rates, morbidity risks, and intraoperative events. Therefore, it is evident that both surgical procedures entail relevant risks and benefits, and the choice of technique should be tailored to the patient's specific needs.

43. IMPACTS OF MASTECTOMY AND THE INFLUENCE OF MAMMOPLASTY ON SELF-ESTEEM: INTEGRATIVE REVIEW

Ana Luiza Sousa Ricci¹, Daniela Rodrigues de Sá¹, Erik Lucas Silva de Sousa¹, Gabriella de Jesus Machado Santos¹, and Raquel Vilanova Araújo².

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Mastectomy is a surgical procedure essential for breast cancer treatment; however, it generates significant impacts on self-image, femininity, self-esteem, and quality of life in survivors. The removal of the breast is often associated with feelings of mutilation, low self-esteem, changes in sexual life, and social isolation. Therefore, mastoplastic emerges as a strategy to mitigate these effects, although socioeconomic, cultural, and structural factors hinder access to the procedure. **OBJECTIVE:** To analyze the psychosocial impacts of mastectomy and the influence of breast reconstruction on women's self-esteem. **METHODS:** This is an integrative review conducted according to the PRISMA guidelines, with a search in PubMed, SciELO, and BVS databases using the descriptors "mastectomy", "self-esteem", "mammoplasty", and "psychosocial impacts". Articles published between 2020 and 2025, in Portuguese, English, and Spanish, available in full text, were included. The review covers qualitative, quantitative studies, and reviews discussing emotional, social, and sexual repercussions of mastectomy and the effects of reconstruction on self-esteem and quality of life. **RESULTS:** The literature shows that mastectomy generates significant effects on

mental health, frequently leading to feelings of sadness, fear, shame, and low self-esteem, affecting sexuality and social life. Depressive symptoms affect up to 25% of patients in the postoperative period. Breast reconstruction, especially immediate reconstruction, showed a positive impact on physical and mental well-being, as well as supporting social reintegration. However, it does not fully eliminate psychosocial repercussions and does not always recover sexual life. Structural and socioeconomic limitations restrict access to reconstructive surgery, such as in Brazil, where only 12.6% of women who underwent mastectomy in the SUS had reconstruction between 2010 and 2021. **CONCLUSION:** It is concluded that the psychosocial impacts of mastectomy highlight the need for comprehensive care that goes beyond surgical treatment, including psychological support and strategies for recovering body identity. Mammoplasty contributes to improving self-esteem and quality of life, but requires public policies that expand equitable access, along with continuous psychological support and educational actions, which are crucial for reducing inequalities and promoting integral rehabilitation.

44. MINIMALLY INVASIVE VS TRADITIONAL TECHNIQUES IN THE TREATMENT OF ABDOMINAL HERNIAS: POSTOPERATIVE IMPACTS

Ana Clara Porto de Sá Ferreira¹, Yasmin Rodrigues Vieira Araujo¹, Ana Júlia Silva Correia¹, Pamela Carolinny Coelho da Silva Costa¹, Paula Renata Rodrigues Ortega mello¹ and Suzane Katy Rocha Oliveira².

¹ Ceuma University

² Federal University of Maranhão

INTRODUCTION: Abdominal hernias are a common surgical condition frequently associated with discomfort, pain, and functional limitation. Surgical management has evolved from traditional approaches, such as laparotomy, to minimally invasive techniques, including laparoscopy and robotic surgery, which offer faster recovery, less postoperative pain, and fewer complications. **OBJECTIVE:** This study aimed to compare outcomes between traditional and minimally invasive techniques for the management of abdominal hernias, with an emphasis on patients' postoperative recovery. **METHODS:** This integrative literature review was conducted to evaluate the impact of these techniques on postoperative outcomes. The literature search was conducted in the PubMed and SciELO databases using the controlled descriptors "abdominal hernia repair", "laparoscopy", "robotic surgery", "postoperative recovery", and "pain", combined with the Boolean operators "AND" and "OR". Studies published between 2014 and 2024 were included, available in full text, with observational clinical design or controlled trials that compared laparotomy, laparoscopy, and robotic surgery, emphasizing outcomes related to postoperative recovery such as hospital stay duration, return to activities, and pain intensity. Narrative reviews, case reports, letters to the editor, and articles not relevant to the topic were excluded. As this is an integrative review without data collection from human subjects or identifiable information, submission to a Research Ethics Committee was not required, in accordance with CNS Resolution No. 510/2016. **RESULTS:** The findings indicated that minimally invasive approaches yielded better outcomes regarding postoperative pain, length of hospital stay, and return to daily activities. Robotic surgery proved effective, although associated with longer operative time and higher costs. In complex cases, such as incarcerated hernias, laparoscopy demonstrated safety and effectiveness comparable to open techniques, with a shorter hospital stay. **CONCLUSION:** In conclusion, minimally invasive techniques provide significant clinical benefits and represent viable, often superior alternatives in various surgical scenarios. Among these benefits, the positive impact on postoperative recovery stands out, characterized by less pain, shorter

hospitalization, and a faster return to normal activities, thereby significantly improving patient experience and quality of life after surgery. However, challenges such as costs, infrastructure, and technical training still limit widespread adoption. Technological advancements and specialized training are essential to expanding access and improving clinical outcomes in the treatment of abdominal hernias.

45. EPIDEMIOLOGICAL PROFILE OF TRACHEOSTOMIES IN BRAZIL AND THE IMPACT OF THE COVID-19 PANDEMIC

Carlos Eduardo Araújo Belfort¹, Paulo Victor De Aguiar Ribeiro¹, Marcos Barros Ferreira Silva Júnior¹, Kleydson Ferreira Lima¹, Filipe Rainan Costa Silva Autor¹, Daniel Pavão Gonçalves¹, and Gutemberg Fernandes De Araujo¹.

¹ Federal University of Maranhão

INTRODUCTION: Tracheostomy (TCT) is a procedure that aims to create communication between the external environment and the trachea, to allow the patient to breathe, while COVID-19, which is found in the mucosa of the aerodigestive tract and transmitted by direct contact, droplets and aerosols, can cause severe acute respiratory syndrome, causing lung changes that require ventilatory support. **OBJECTIVE:** In this sense, the objective of the work is to highlight the epidemiology of TCT in Brazil and its relationship with the COVID-19 pandemic, aiming at a better understanding of the care that patients need. **METHODS:** An epidemiological and descriptive study based on data from the Department of Informatics of the Unified Health System (DATASUS) on the prevalence of TCT between 2017 and 2024. Furthermore, searches were carried out in scientific journals, published in the last 5 years, on the Scielo and Pubmed platforms, with the terms "tracheostomy", "COVID-19" and "pandemic" to highlight questions about COVID-19. **RESULTS:** Between January 2017 and May 2024, the number of TCT varied significantly. The national peak occurred in May 2021, with 1,877 procedures, during the pandemic. After a decline in 2022 and 2023, the numbers rose again in 2024, influenced by changes in clinical guidelines. Regionally, all regions followed the national trend. The Northeast had peaks in May 2017 (6,446) and June 2021 (6,602). In the Southeast, the highest volume was in January 2019 (5,960), with a new high in April 2024 (4,868). The South recorded its peak in July 2021 (6,548) and a decline in 2024 (2,114). The Center-West maintained the lowest volumes, with 1,535 in January 2024. The North had an early peak, in January 2017 (1,702), with more moderate variations over time. **CONCLUSION:** Therefore, an increase in TCT procedures during the pandemic is evident, with this increase being more pronounced in the Northeast and South regions. It is believed that changes in clinical guidelines and the progressive decline in COVID-19 cases in the years following the pandemic were responsible for the decrease in the procedure during this same period. However, more detailed studies are needed to better demonstrate the risk-benefit ratio and the optimal timing and recommendations for this procedure in COVID-19 patients.

46. CARDIOVASCULAR IMPACTS OF MICROPLASTIC EXPOSURE IN MURINE MODELS: AN INTEGRATIVE REVIEW FROM 2020 TO 2025

Wilker Frainkyli Silva Mendonça¹, Lara Luiza Pitombeira Rocha¹, Maria Júlia de Sena Lopes¹, Layna Ravenna Batista de Lima¹ and Rachel Melo Ribeiro¹.

¹ Federal University of Maranhão

INTRODUCTION: The widespread environmental contamination by microplastics (MPs) and their increasing detection in biological tissues have raised scientific concern regarding their potential deleterious effects on human and animal health. Experimental evidence suggests that MPs can bioaccumulate and induce oxidative stress, cellular

senescence, mitochondrial dysfunction, and activation of systemic inflammatory pathways. Although studies using in vitro and in vivo models have advanced the understanding of these effects, investigations specifically addressing their cardiotoxicity remain scarce and fragmented. **OBJECTIVE:** This study aimed to critically analyze the cardiovascular effects of MP exposure in murine models. **METHODS:** An integrative literature review was conducted in July 2025 through a structured search of the PubMed, Scopus, and Embase databases, using the controlled descriptors "Microplastics," "murine model," "rats," "Mus musculus," "Wistar rats," "Rattus norvegicus," "cardiotoxicity," and "blood pressure," combined with the Boolean operator "AND." The initial screening identified 180 publications, of which 33 were selected after applying inclusion criteria (English-language articles published between 2020 and 2025, open access, containing descriptors in the title/abstract, and directly addressing the topic) and exclusion criteria (duplicates, paid-access papers, or divergent scope). **RESULTS:** The included studies demonstrated that MP exposure in rodents leads to significant cardiovascular dysfunctions, including myocardial inflammation, interstitial fibrosis, cardiac hypertrophy, mitochondrial dysfunction, and hemodynamic alterations. Structural changes in cardiac tissue, increased pro-inflammatory cytokines, decreased antioxidant enzyme activity, and induction of inflammatory cell death were observed. MPs also affected pro-fibrotic, epigenetic, and metabolic molecular pathways, with alterations in lipid biosynthesis, glucose metabolism, and gut microbiota composition. Chronic exposure and the presence of nanoplastics were associated with more severe effects. **CONCLUSION:** It is concluded that MPs, particularly those made of polystyrene, induce significant cardiovascular alterations in murine models, with effects dependent on dose, polymer type, and exposure duration. Future studies are needed to elucidate the underlying molecular mechanisms, refine experimental models, and enable translational extrapolation of findings to human health.

47. EPIDEMIOLOGICAL PROFILE OF HOSPITAL ADMISSIONS FOR ASTHMA IN BRAZIL BETWEEN 2019 AND 2024

Cecília Giovanna Dos Santos Sarmiento¹, Gabriel Costa Garcia¹, Laura Batista Cruz¹, Lara Vitória Araújo Oliveira¹, Gabriel Alves Lima², Sophie Marie Machado Aragão³ and Felipe Austriaco Teixeira¹.

¹ State University of the Tocantina Region of Maranhão

² Federal University of Lavras

³ Federal University of Maranhão

INTRODUCTION: Asthma is a chronic disease characterized by inflammation of the airways, with episodes of dyspnea, coughing, and wheezing. With a significant impact on quality of life, it is one of the leading causes of hospital admissions in Brazil. Given this scenario, it is necessary to understand the epidemiological profile of asthma admissions in the country, with a view to supporting more effective and targeted public policies. **OBJECTIVE:** The objective of this study is to outline the epidemiological characteristics of hospitalizations for asthma in Brazil between 2019 and 2024. **METHODS:** This is a descriptive, ecological study based on secondary data from the SUS Hospital Information System (SIH/SUS) and the SUS Department of Information and Informatics, DataSus. The inclusion criterion was data on asthma in Brazil between 2019 and 2024, and the exclusion criterion was data outside this time frame and incomplete data. The dependent variables analyzed were age group, gender, geographic region, total value, and hospitalizations, and the independent variable was the absolute numbers for asthma (ICD-10 J45). **RESULTS:** During

the period analyzed, the Southeast region had the highest expenditure on hospitalizations for asthma (38.42%), but the Northeast had the highest hospitalization rate (34.80%). The age group most affected was 0 to 14 years (64.03%). In terms of gender, there was a slight predominance of hospitalizations among men (50.48%). **CONCLUSION:** It can be concluded that the profile of hospitalizations for asthma in Brazil presents specific characteristics related to age group, geographic region, and gender. Analysis of these factors is essential for identifying vulnerable groups, enabling the formulation of public policies for the prevention, treatment, and control of asthma in the country.

48. CONTRALATERAL PROPHYLACTIC MASTECTOMY IN WOMEN WITH UNILATERAL BREAST CANCER AND BRCA1/2 MUTATION: A SYSTEMATIC REVIEW

Ryan Felipe De Almeida Costa¹, Isabelle Vitória Rocha Da Silva¹, Leandro Moreno Da Cruz¹, Nadylla Glenda Gomes Araújo¹, Edivaldo Coelho Madeira De Sousa Júnior¹, Jilmario Gomes De Santana Junior¹, Ana Gabriela Caldas Oliveira¹.

¹ Federal University of Maranhão

INTRODUCTION: Breast cancer is the most common malignancy among women globally, excluding non-melanoma skin cancer. The presence of BRCA1 or BRCA2 mutations elevates the risk of developing Contralateral Breast Cancer (CBC), leading to the increased use of Contralateral Prophylactic Mastectomy (CPM) as a preventive measure. Its full impact on Overall Survival (OS) is still a topic of debate. **OBJECTIVE:** To evaluate the impact of CPM, compared to clinical follow-up, on the incidence of Contralateral Breast Cancer (CBC) and Overall Survival (OS) in women with unilateral breast cancer carrying BRCA1 or BRCA2 mutations. **METHODS:** A systematic review was conducted following PRISMA guidelines, searching PubMed, SciELO, and Google Scholar between April and July 2025. The search utilized the descriptors: "BRCA1 OR BRCA2 AND contralateral prophylactic mastectomy AND breast cancer AND survival OR incidence". The review included clinical trials, cohorts, and meta-analyses published in the last five years. Out of 19 initial articles found, 5 studies were included in the final analysis. **RESULTS:** The data suggest that CPM significantly reduces CBC incidence (RR 0.07; 95% CI: 0.03–0.17; p<0.001). A trend toward increased overall survival was also observed in specific subgroups. Some studies demonstrated a statistical survival benefit (HR 0.72–0.83), while others did not show a statistically significant impact, especially in patients with the triple-negative subtype. Furthermore, factors such as race and access to healthcare were noted to influence outcomes. **CONCLUSION:** CPM can be an effective preventive strategy for women with BRCA1 and BRCA2 mutations. Its benefits are especially noted when associated with individual clinical factors and appropriate oncological support.

49. PREVALENCE OF CHRONIC COMORBIDITIES IN PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

Alexia Carolina Freire Silva de Almeida¹, Paulo Victor de Aguiar Ribeiro², Mariana Guimarães Rocha¹, Maria Júlia de Sena Lopes¹, Elíomar da Cruz Filho¹ and José Albuquerque de Figueiredo Neto¹.

¹ Federal University of Maranhão

INTRODUCTION: Heart Failure with Reduced Ejection Fraction (HFrEF) is a clinical syndrome characterized by left ventricular systolic dysfunction and high morbidity and mortality. Patients with HFrEF exhibit a complex clinical profile with multiple chronic comorbidities

that may increase the frequency of hospitalizations and the need for therapeutic interventions. **OBJECTIVE:** Investigate the prevalence and profile of comorbidities in patients with HFrEF followed in a specialized outpatient clinic. **METHODS:** This was a cross-sectional, observational study including patients diagnosed with HFrEF, treated at the Cardiology Outpatient Clinic of a University Hospital in Maranhão, Brazil. Sociodemographic and clinical data were collected between September 2023 and June 2024. The comorbidities analyzed included: Hypertension (HTN), Diabetes Mellitus (DM), Chronic Kidney Disease (CKD), Dyslipidemia, Chronic Obstructive Pulmonary Disease (COPD), Myocardial Infarction (MI), Atrial Fibrillation (AF), Rheumatologic Disease, Gastrointestinal Ulcers, Obesity, Depression, and Dementia. Statistical analyses were performed using RStudio (v. 4.5.1), employing Wilson's method with continuity correction to calculate 95% confidence intervals (95% CI). The study was approved by the Research Ethics Committee (CAAE: 25756919.9.2004.5086). **RESULTS** The study included 235 patients with heart failure, with a median age of 59 years (IQR: 48.3–67), of whom 71.5% (n = 168) were male. The most prevalent comorbidity was hypertension, affecting 63.3% of patients (95% CI: 56.7%–69.4%), followed by dyslipidemia (39.8%), myocardial infarction (31.3%), and diabetes mellitus (29.1%). Other relevant conditions included obesity (13.3%), atrial fibrillation (7.5%), chronic kidney disease (6.8%), depression (4.7%), and rheumatologic diseases (4.3%). Gastrointestinal ulcers (3.4%), COPD (1.7%), and dementia (0.0%) showed low or no occurrence. Most patients presented with multiple comorbidities, with a median of two conditions (IQR: 2); 62.0% had between two and four, while 17.5% had none of the investigated conditions. **CONCLUSION:** This study demonstrated that chronic comorbidities such as hypertension, myocardial infarction, dyslipidemia, and diabetes mellitus are highly prevalent among patients with HFrEF. These findings underscore the clinical complexity of this population and highlight the importance of early screening, strict control, and individualized treatment aimed at reducing morbidity and mortality and improving prognosis through an integrated, multidisciplinary approach.

50. EPIDEMIOLOGICAL PROFILE OF LEPROSY IN BRAZIL (2018–2022): TEMPORAL TRENDS AND SOCIOECONOMIC INEQUALITIES

Higraine Vitória Bispo Carvalho¹, Lara Kananda Morais Sena¹, Maria Fernanda Caroline Vieira Lima¹, Rogério Bezerra de Almeida Filho¹, Sophia Vitória Monteiro Nascimento¹ and Eduarda Gomes Boguea².

¹Florence University Center — Undergraduate Program in Medicine

² Florence University Center — Faculty of Medicine (Supervisor).

INTRODUCTION: Leprosy, caused by the obligate intracellular bacillus *Mycobacterium leprae*, is a chronic granulomatous infectious disease that primarily affects the skin and peripheral nerves. It remains an important public health challenge in endemic regions. Transmission occurs mainly through prolonged close contact with untreated bacilliferous individuals, via airborne droplets from the upper respiratory tract. Despite free multidrug therapy (MDT) provided by the Brazilian Unified Health System (SUS), leprosy persists as a neglected tropical disease, strongly associated with social vulnerability, poverty, limited access to healthcare services, and structural inequities. Stigma related to the disease reinforces diagnostic delay and treatment dropout, perpetuating the transmission chain. **OBJECTIVE:** To analyze the temporal epidemiological trend of leprosy in Brazil from 2018 to 2022,

considering sociodemographic and clinical variables, and to investigate the relationship between case distribution and socioeconomic inequalities in different regions of the country. **METHODS:** A cross-sectional, epidemiological, descriptive, and quantitative study was performed using secondary data. Information was extracted from the Notifiable Diseases Information System (SINAN) via the DATASUS database. Variables analyzed included sex, age range, educational level, race/skin color, geographical region, municipality of residence, and clinical forms of leprosy. Prevalence rates (per 100,000 inhabitants) were calculated annually, and results were stratified by region to enable temporal and comparative epidemiological interpretation. Data tabulation and descriptive statistical analysis were performed using Microsoft Excel. **RESULTS:** From 2018 to 2022, national prevalence rates decreased from 17.66 to 12.14 cases per 100,000 inhabitants, with the lowest rate recorded in 2020 (11.05/100,000), likely influenced by underreporting due to the COVID-19 pandemic and restricted access to diagnostic services. Higher burdens were observed in the North and Central-West regions—geographical areas characterized by greater socioeconomic vulnerability—while lower rates were observed in the South and Southeast. The most affected profile included males, young adults, individuals with low educational attainment, and people identified as brown or Black, reinforcing the association with social inequities. Among children under 15 years old, cases were predominantly found in boys aged 10–14 years with incomplete basic education, indicating active transmission and recent exposure within endemic communities. **CONCLUSION:** Leprosy in Brazil remains strongly associated with socioeconomic disparities and unequal access to health services. Although the prevalence decreased during the analyzed period, the reduction—especially in 2020—likely reflects surveillance disruption and diagnostic underreporting rather than effective disease control. The findings indicate that leprosy disproportionately affects socially vulnerable populations. Strengthening primary healthcare surveillance, expanding access to early diagnosis, reducing stigma, and prioritizing affected regions are essential strategies to interrupt transmission and reduce the burden of disability related to leprosy.

51. EPIDEMIOLOGICAL AND MICROBIOLOGICAL PROFILE OF HEALTHCARE-ASSOCIATED INFECTIONS IN NEONATAL INTENSIVE CARE UNITS IN MARANHÃO (2019–2023)

Thalita Linda Alves Candeira¹, Luís Fernando Nogueira Furtado¹, Lara Luiza Pitombeira Rocha¹, Jéssica Cristine da Silva Conceição¹, Karylaine Castro Andrade¹ and Mônica Elinor Alves Gama¹.

¹Federal University of Maranhão

INTRODUCTION: Healthcare-Associated Infections (HAIs) in Neonatal Intensive Care Units (NICUs) represent a serious public health problem due to the immunological immaturity of newborns and the frequent use of invasive devices. The situation is aggravated by the presence of multidrug-resistant microorganisms, which complicates treatment and increases neonatal morbidity and mortality. **OBJECTIVES:** To analyze the epidemiological and microbiological profile of HAIs in NICUs in Maranhão between 2019 and 2023, highlighting the main isolated microorganisms, resistance patterns, and the indicators of incidence density (ID) and device utilization rate (UR) of invasive devices. **METHODS:** Descriptive, retrospective, quantitative study based on secondary data extracted from ANVISA's annual reports on HAIs in NICUs in Maranhão. Incidence density, utilization rate, and microbiological profile were

analyzed, including antimicrobial resistance, with Pearson's correlation coefficient applied to assess the association between ID and UR. **RESULTS:** A total of 756 microorganisms were isolated in cases of laboratory-confirmed primary bloodstream infections (LCBSI), with a predominance of gram-negative bacteria (55%), particularly *Klebsiella pneumoniae* (31.4%) and *Pseudomonas aeruginosa* (12.9%). Among gram-positive bacteria (39%), coagulase-negative *Staphylococcus* (71.9%) and *Staphylococcus aureus* (18.1%) were highlighted. Sensitivity tests revealed high resistance to cephalosporins and carbapenems. The central venous catheter (CVC) utilization rate ranged from 25% to 35%, with LCBSI incidence density between 10% and 15.5%. Correlations between UR and ID were weak and not significant (LCBSI: $r=+0.24$; $p=0.69$; VAP: $r=-0.72$; $p=0.17$). **CONCLUSION:** HAIs remain a critical challenge in NICUs in Maranhão, with high incidence and a significant presence of multidrug-resistant pathogens. The lack of statistical association between device use and incidence density suggests that other factors, such as structural failures and care practices, influence infection occurrence. Continuous surveillance, rational antimicrobial use, and the implementation of effective infection prevention and control measures are strongly recommended.

52. CLINICAL OUTCOMES OF EMERGENCY AND URGENCY ATTENDANCES FOR CARDIOVASCULAR EVENTS IN SÃO LUÍS, MARANHÃO

Thiago Vinicius de Araújo Costa¹, Josemar Marcelino Ferreira Godinho Junior¹, Heloisa Maria Lima Gonçalves¹, Rôzele Robson Marques¹, Méllany Pinheiro Cacau¹, Sophia Vitoria Monteiro Nascimento¹ and Eduarda Gomes Boguea¹.

¹ Florence University Center.

INTRODUCTION: Approximately 80% of cardiopulmonary arrests (CPAs) occur in out-of-hospital environments, necessitating immediate and highly qualified pre-hospital interventions. The Mobile Emergency Care Service (Serviço de Atendimento Móvel de Urgência – SAMU) plays an essential role in these contexts, with its efficiency potentially impacting patient clinical outcomes. **OBJECTIVE:** This study aimed to analyze the clinical outcomes resulting from cardiovascular emergency and urgency attendances provided by the SAMU service in São Luís, Maranhão. **METHODS:** The design employed was a retrospective, analytical, and quantitative study, utilizing data extracted from the Medical Regulation Individual Forms concerning cardiovascular cases managed by SAMU during the two-month period of January and February 2017. The variables analyzed were sex, age group, the presence of prior comorbidities, and the resulting clinical outcome (favorable outcome or death). Statistical analyses were performed using STATA® software (v14.0), applying Pearson's Chi-squared test, with statistical significance established at $p<0.05$. The study received formal approval from the Research Ethics Committee of the Federal University of Maranhão, registered under CAAE protocol number 2.935.029. **RESULTS:** Of the 41 patients attended for acute cardiovascular events, 63.4% ($n=26$) achieved a favorable clinical outcome, while 36.6% ($n=15$) resulted in death. No statistically significant associations were found between clinical outcome and sex ($p=0.317$), age group ($p=0.421$), or the presence of prior cardiovascular disease ($p=0.082$). However, a higher proportion of deaths was descriptively observed among female patients (42.3% versus 26.7%), with age exceeding 80 years (47.1%), and among those without a prior history of cardiovascular disease (50.0% versus 23.8%). It was observed that patients attended by Advanced Life Support (ALS) units, known in Brazil as Suporte Avançado de Vida (SAV), exhibited a substantially higher mortality

rate (65.0%) compared to those attended by Basic Life Support (BLS) units, or Suporte Básico de Vida (SBV), which showed a mortality rate of only 9.5%. This difference was highly statistically significant ($p<0.001$), reflecting the inherent clinical gravity associated with cases that necessitate specialized care. It is noteworthy that two patients evolved to death while receiving assistance in a BLS ambulance. **CONCLUSION:** The findings underscore the crucial importance of SAMU in providing immediate, life-saving response to severe cardiovascular incidents. These results reinforce the continuous need for integrated strategies centered on professional team qualification, rigorous and appropriate triage protocols, and robust articulation across the entire urgency and emergency network to maximize the effectiveness and definitive treatment capability (resolutivity) of pre-hospital attention.

Poster Session RESEARCH ABSTRACTS

01. IMPACT OF THE VARIABLE "YEARS OF SCHOOLING" ON MORTALITY FROM SYSTEMIC SCLEROSIS IN BRAZIL (2000–2020)

Layza Hellen Fernandes Menezes¹ and Consuelo Penha Castro Marques¹

¹ Federal University of Maranhão

INTRODUCTION: Systemic Sclerosis (SSc) is a chronic autoimmune disease characterized by progressive fibrosis of the skin and internal organs such as the lungs and kidneys. Its pathophysiology involves immunological and vascular mechanisms, resulting in excessive collagen deposition. Clinically, it is divided into limited and diffuse forms, the latter being more severe with a higher risk of visceral involvement. Diagnosis is based on serological, radiological, and clinical criteria such as Raynaud's phenomenon, present in 95% of cases. The presence of specific autoantibodies assists in prognosis. Treatment aims to control symptoms and disease progression through immunosuppressants, vasodilators, and supportive therapies. **OBJECTIVE:** The objective of this study was to analyze the association between years of schooling and mortality from systemic sclerosis in Brazil. **METHODS:** This observational, analytical, and ecological study analyzed the association between educational attainment and mortality from SSc in Brazil, not requiring ethical approval in accordance with Resolution No. 510/2016. The methodology used mortality data from SSc provided by DATASUS, classified under ICD-10 code M34, and stratified by state and sociodemographic variables (sex, age group, educational level, race, and state). The data were organized using Google Sheets and analyzed in R with the "ggplot2" and "geobr" packages to create a heat map. The Chi-square test was applied to assess the association between educational level and mortality, with a significance level of 5%. Adjusted residuals were analyzed to identify the impact of each schooling category on mortality. **RESULTS:** A total of 3,824 deaths from SSc were recorded in Brazil between 2000 and 2020. There was a higher rate of deaths among females (77.71%), individuals aged 40 to 49 years (41.51%), and those identified as white (58.47%). In the state of São Paulo, 986 deaths were recorded, accounting for 25.78% of all deaths during the period. The highest number of deaths occurred in the group with 1 to 3 years of schooling (695), while the lowest was observed among individuals with 12 or more years of schooling (403). **CONCLUSION:** The distribution of deaths by educational level showed a statistically significant association ($p < 0.05$) between years of schooling and mortality. This finding reinforces the impact of socioeconomic inequalities on access to healthcare, indicating that populations with lower educational

attainment face greater difficulties in obtaining medical care. This suggests that public health strategies should focus on equity, ensuring that more vulnerable groups have adequate access to services, aiming to reduce inequities.

02. FACTORS ASSOCIATED WITH INTIMATE PARTNER VIOLENCE DURING PREGNANCY: AN INTEGRATIVE REVIEW FROM 2015 TO 2024

Beatriz Mota Moreno¹, Alice Beatriz Tomaz Tavares¹, Stefanny Rafaelly Freitas Garcia¹ and Thalita Santana Conceição¹.

¹ Federal University of Maranhão

INTRODUCTION: According to the World Health Organization (WHO), intimate partner violence (IPV) is understood as gender-based violence characterized by mental, physical, or sexual harm and abuse to those involved in a relationship. In the case of pregnant women, besides being a complex phenomenon, violence during this phase can negatively impact maternal and fetal health, with repercussions such as miscarriage, premature birth, low birth weight, poor adherence to prenatal care, and mental disorders. **OBJECTIVE:** To analyze the socioeconomic and behavioral factors associated with the greater occurrence of violence against women during pregnancy. **METHODS:** This is an integrative literature review of articles published between 2015 and 2024 in the SCIELO and BVS databases. The following combination of descriptors, extracted from DeCS/MeSH (Health Sciences Descriptors), was used: ("Intimate Partner Violence") AND ("Spousal Abuse") AND ("Pregnancy") in Portuguese; and ("Intimate Partner Violence") AND ("Spousal Abuse") AND ("Pregnancy") in English. **RESULTS:** Ten articles were selected for this review. Although there is no clear evidence as to whether pregnancy acts as a risk or protective factor for violence, it is understood that these episodes are a continuation of previous events. All studies demonstrated that psychological violence was more common than physical and sexual violence. Regarding socioeconomic factors, particularly those related to the victim, young women with a history of personal or family violence (especially witnessing aggression against the mother), low education and income, early sexual initiation, multiple partners, unplanned pregnancy, abortion or attempted abortion, more than two children, and low social support were identified as having a higher risk of IPV. Regarding the partner's behavioral aspects, low education, unemployment, alcohol and illicit drug use were identified. Other precipitating factors were not being the child's biological father, condom abuse, the woman's refusal of sexual intercourse, jealousy, suspicion of infidelity, and arguments with third parties. **CONCLUSION:** Violence against pregnant women is a matter of concern, especially when associated with a vulnerable female profile and the aggressor's behavior. It is crucial that healthcare professionals know how to identify risk situations, especially at appropriate times such as prenatal and well-child visits.

03. ADVANCES IN IMMUNOTHERAPY FOR THE TREATMENT OF LUNG CANCER

Maria Fernanda Lauande Cardoso Lima¹, Carlos Eduardo Araújo Belfort¹, Daniel Pavão Gonçalves¹, Filipe Rainan Costa Silva¹, Isabela Marinho da Cunha¹, Paulo Victor de Aguiar Ribeiro¹ and Rachel Melo Ribeiro¹

¹ Federal University of Maranhão

INTRODUCTION: Skin cancer is the most prevalent group of neoplasms in Brazil, classified as basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and cutaneous melanoma. The main etiology is related to cumulative exposure to ultraviolet radiation,

especially UVB, which causes mutations in genes such as TP53, PTCH1, BRAF, and NRAS. The Northeast Region stands out as it ranks third nationally in the volume of hospitalizations for skin cancer. Factors such as high solar radiation, the predominance of outdoor work activities, and the limited availability of specialized services, justify the territorial choice for this study. **OBJECTIVE:** To analyze the epidemiological profile of malignant skin neoplasms in the Northeast Region of Brazil, between the years 2013 and 2024. **METHODS:** This is an observational and descriptive epidemiological study, with a time frame from 2013 to 2024, using public data from the TabNet/DATASUS system. The variables analyzed included the number of hospitalizations, deaths, sex, race/color, and age group. Descriptive statistical analysis was used, with values expressed as relative and absolute figures for the variables under investigation. **RESULTS:** In the evaluated period, 108,233 hospitalizations and 2,103 deaths due to skin cancer were recorded in the Northeast Region. Pernambuco led in the number of hospitalizations (23.1%), followed by Bahia (18.3%) and Rio Grande do Norte (17.7%). A growing inclination was observed in recent years, particularly in 2022 (20.89%), 2023 (8.81%), and 2024 (24.85%). Between 2020 and 2024, there was a 111.6% increase in hospitalizations and a 35.1% increase in deaths. The most affected age group was 70 to 79 years, with 26,638 hospitalizations (24.6%) and 484 deaths (23%). Men accounted for the majority of cases (52.7% of hospitalizations and 60% of deaths). Regarding race/color, brown/mixed-race (pardo) individuals predominated in both hospitalizations (73%) and deaths (63.9%). **CONCLUSION:** The data reveal a significant increase in hospitalizations and deaths from skin cancer in the Northeast Region, with a greater impact on elderly, brown/mixed-race (pardo) men, especially in Pernambuco, Bahia, and Rio Grande do Norte. The scarcity of information on education, occupation, and histological type limits a more in-depth analysis. The findings reinforce the need to expand access to early diagnosis and specialized treatment, in addition to strengthening public prevention policies and improving the quality of health records.

04. A TEMPORAL ANALYSIS OF SKIN CANCER INCIDENCE IN NORTHEAST BRAZIL (2013–2024)

José Augusto Lobão Marinho Sobrinho¹, Alexandros Paris Mesquita Ipácio¹ and Ana Clara Gonsaga Silva¹.

¹ Federal University of Maranhão

INTRODUCTION: Systemic Sclerosis (SSc) is a chronic autoimmune disease characterized by progressive fibrosis of the skin and internal organs such as the lungs and kidneys. Its pathophysiology involves immunological and vascular mechanisms, resulting in excessive collagen deposition. Clinically, it is divided into limited and diffuse forms, the latter being more severe with a higher risk of visceral involvement. Diagnosis is based on serological, radiological, and clinical criteria such as Raynaud's phenomenon, present in 95% of cases. The presence of specific autoantibodies assists in prognosis. Treatment aims to control symptoms and disease progression through immunosuppressants, vasodilators, and supportive therapies. **OBJECTIVE:** The objective of this study was to analyze the association between years of schooling and mortality from systemic sclerosis in Brazil. **METHODS:** This observational, analytical, and ecological study analyzed the association between educational attainment and mortality from SSc in Brazil, not requiring ethical approval in accordance with Resolution No. 510/2016. The methodology used mortality data from SSc provided by DATASUS, classified under ICD-10 code M34, and stratified by state and sociodemographic variables (sex, age group, educational level, race,

and state). The data were organized using Google Sheets and analyzed in R with the "ggplot2" and "geobr" packages to create a heat map. The Chi-square test was applied to assess the association between educational level and mortality, with a significance level of 5%. Adjusted residuals were analyzed to identify the impact of each schooling category on mortality. **RESULTS:** A total of 3,824 deaths from SSC were recorded in Brazil between 2000 and 2020. There was a higher rate of deaths among females (77.71%), individuals aged 40 to 49 years (41.51%), and those identified as white (58.47%). In the state of São Paulo, 986 deaths were recorded, accounting for 25.78% of all deaths during the period. The highest number of deaths occurred in the group with 1 to 3 years of schooling (695), while the lowest was observed among individuals with 12 or more years of schooling (403). **CONCLUSION:** The distribution of deaths by educational level showed a statistically significant association ($p < 0.05$) between years of schooling and mortality. This finding reinforces the impact of socioeconomic inequalities on access to healthcare, indicating that populations with lower educational attainment face greater difficulties in obtaining medical care. This suggests that public health strategies should focus on equity, ensuring that more vulnerable groups have adequate access to services, aiming to reduce inequities.

05. MINIMALLY INVASIVE THORACIC ONCOLOGIC SURGERY: PERSPECTIVES ON ROBOTIC AND VIDEO-ASSISTED APPROACHES

André Guimarães de Araújo¹, Maria Eduarda Ribeiro Campelo¹, Maria Fernanda Lauande Cardoso Lima¹, Yasmin Maciel Costa¹ and Giuliano Peixoto Campelo.²

¹ Federal University of Maranhão

² ProCirurgico

INTRODUCTION: Video-assisted thoracoscopic surgery (VATS) is a worldwide well-established technique for the treatment of thoracic cavity disorders, particularly neoplasms. In this context, robot-assisted thoracoscopic surgery (RATS) has emerged as an innovative advancement for the management of these diseases. Therefore, it is pertinent to comparatively analyze the potential advantages of RATS over VATS. **OBJECTIVE:** To compare the clinical outcomes associated with robotic versus video-assisted thoracic oncologic surgery. **METHODS:** Integrative literature review through which nine articles published between 2020 and 2025 were identified in the PubMed database, of which five were excluded due to lack of relevance to the topic. The search was conducted using the keywords: "lobectomy," "robotic," "surgery," and "pulmonary," combined with the Boolean operator "AND". **RESULTS:** Through these methods, it was observed that thoracic surgeons generally agree that Robot-Assisted Thoracic Surgery (RATS) offers several advantages, including tremor filtration, improved ergonomics, and a higher degree of instrument maneuverability. Although the robotic approach inherently lacks tactile feedback, the enhanced three-dimensional visualization it provides contributes substantially to movement precision. A meta-analysis encompassing 11,247 patients with lung cancer demonstrated a significantly higher number of lymph nodes resected in robotic procedures ($p = 0.002$), a prognostic factor of considerable relevance for oncologic outcomes, which was associated with a significantly lower recurrence rate ($p < 0.001$). In addition, RATS was linked to a reduced incidence of postoperative complications ($p = 0.02$) and a shorter postoperative hospital stay ($p < 0.001$). However, no statistically significant differences were observed between RATS and conventional techniques in terms of mortality ($p = 0.97$) or disease-free survival ($p = 0.89$), and RATS remained associated with higher procedural costs ($p < 0.001$). **CONCLUSION:**

The reviewed studies indicated the superiority of robotic-assisted thoracic oncologic surgery in several aspects. However, the scarcity of randomized controlled trials directly comparing the two techniques, along with the high cost associated with RATS, limits the possibility of drawing definitive conclusions. Therefore, it is crucial to emphasize the need for careful evaluation when determining the most appropriate surgical approach for each case.

06. CARDIOTOXICITY ASSOCIATED WITH CHEMOTHERAPY IN PEDIATRIC ONCOLOGY PATIENTS: A SYSTEMATIC REVIEW OF THE LITERATURE

Nadylla Glenda Gomes Araujo¹, Edivaldo Coelho Madeira de Sousa Júnior¹, Isabelle Vitória Rocha da Silva¹, Leandro Moreno da Cruz¹, Ryan Felipe de Almeida Costa¹, Yasmin Andrade Sampaio¹ and Ana Gabriela Caldas Oliveira².

¹ Federal University of Maranhão

INTRODUCTION: Cardiotoxicity is an important yet often underestimated adverse effect of chemotherapy in pediatric patients. Despite the widespread use of antineoplastic agents, there are no specific clinical guidelines for cardiac monitoring in this population. Factors such as cumulative drug dose, patient age, lack of baseline cardiac assessments, and limited surveillance methods contribute to the worsening of clinical outcomes. These gaps underscore the urgent need for standardized screening and early intervention protocols focused on preventing irreversible cardiovascular damage in children undergoing cancer treatment. **OBJECTIVES:** In this context, the present study aims to analyze the main cardiovascular effects observed in this population, emphasizing their most frequent manifestations and the need for specialized follow-up throughout treatment. **METHODS:** This is a systematic literature review based on the PICO strategy. Observational (3), systematic (1), and cross-sectional (1) cohort studies published in the past five years, in English or Portuguese, were included, using the descriptors "cardiotoxicity in pediatric patients AND chemotherapy." Preclinical studies were excluded. **RESULTS:** After screening 77 articles, five were included. All studies assessed pediatric patients with Acute Lymphoblastic Leukemia, Non-Hodgkin Lymphoma, or Acute Myeloid Leukemia treated with anthracycline-based chemotherapy. One prospective study identified cardiotoxicity in 17.9% of patients receiving doses greater than 120 mg/m². Two observational studies reported a marked decrease in left ventricular ejection fraction (LVEF), T-wave inversion, valvular dysfunctions, and risk of atrial fibrillation. One case report described myocardial injury diagnosed by echocardiography, which progressed to tachyarrhythmia and death. In a cross-sectional study, 15.9% of patients presented cardiotoxicity, with one death due to sepsis. All studies highlighted limitations such as the absence of baseline echocardiography and sampling restricted to single centers. **CONCLUSION:** Evidence suggests that early screening strategies and the use of beta-blockers and ACE inhibitors may improve clinical outcomes in pediatric oncology patients undergoing chemotherapy, particularly in hematologic malignancies treated with anthracyclines. The studied population was limited to a few cancer types; therefore, further research on cardioprotection in other populations may enhance understanding of the observed events.

07. UNDERSTANDING FIBROMYALGIA AS PAIN: AN INTEGRATIVE REVIEW OF THE PARADIGM SHIFT IN MEDICAL LITERATURE

Klécia Patrícia de Melo Lindoso¹, Lunna Figueiredo Leal¹, Letícia Pinheiro Nogueira¹, Manuela Régia Ferreira Martins¹, Maria Regina Melo Andrade¹, Yasmin Maciel Costa¹ and José Osvaldo Barbosa Neto¹.

¹ State University of Maranhão

INTRODUCTION: Fibromyalgia is a chronic condition characterized by widespread pain, fatigue, and sleep disturbances. Its understanding has evolved from a limited psychosomatic model to a biopsychosocial paradigm supported by the concept of nociplastic pain. This shift has reduced psychogenic stigma and paved the way for new diagnostic and therapeutic approaches. **OBJECTIVE:** To analyze the evolution of paradigms in the medical literature on fibromyalgia, highlighting the transition from the psychosomatic pain model to the concept of nociplastic pain. **METHODS:** This study is an integrative literature review, a methodological strategy that allows for the systematic and comprehensive gathering, evaluation, and synthesis of studies with different approaches. A search was conducted in the PubMed and LILACS databases using the descriptors "fibromyalgia AND nociplastic pain" and "fibromyalgia AND psychosomatic pain," as well as their equivalents in Portuguese. Only open-access articles with "fibromyalgia" or "fibromialgia" in the title were included, totaling 18 studies (9 on nociplastic pain and 3 on psychosomatic pain in PubMed; 3 on nociplastic pain and 3 on psychosomatic pain in LILACS). The studies were categorized by authorship, year, methodology, objectives, and pain approach, and critically appraised according to the Critical Appraisal Skills Programme (CASP) criteria. **RESULTS:** The data analysis revealed a predominance of narrative reviews and observational studies, complemented by clinical trials and experimental research with greater methodological robustness, which consolidate central sensitization and neurophysiological mechanisms as key elements of the syndrome. The analysis and interpretation of findings showed that psychosomatic studies were concentrated between 2003 and 2013, whereas publications from 2019 to 2025 consolidate the nociplastic model, without excluding the relevance of emotional and social factors. The synthesis of knowledge demonstrates the progressive integration between biological and psychosocial mechanisms, highlighting the need for multidisciplinary approaches and the importance of biopsychosocial assessment. **CONCLUSION:** The current literature converges toward an expanded biopsychosocial paradigm centered on nociplastic pain, while preserving the relevance of emotional factors. This evolution underscores the need for methodologically robust studies that integrate different dimensions of the disease and support more effective clinical interventions and public policies.

08. CURRENT SCENARIO OF DRUG THERAPY FOR TRANSTHYRETIN AMYLOIDOSIS: AN INTEGRATIVE REVIEW

Sophia Reis Gomes Aguiar¹, Lorena Dutra de Matos Bastos¹, Luana Vitória Marinho de Abreu¹, João Victor Lopes Oliveira¹, Júlia Leitão Neves Azevedo¹, Marina de Carvalho Vanderlei Azevedo¹ and Yara Nayá Lopes de Andrade¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Transthyretin amyloidosis (ATTR) is a rare, progressive, irreversible, and fatal disease that affects the transport of retinol in the bloodstream. This condition is characterized by the

aggregation of abnormal transthyretin (TTR) peptides, which deposit and accumulate in a variety of systems, such as the cardiovascular and nervous systems. **OBJECTIVE:** To describe the current landscape and the main scientific advances aimed at the clinical practice of transthyretin amyloidosis. **METHODS:** The literature search was conducted in the PubMed and Biblioteca Virtual em Saúde (BVS) databases. The descriptors "Amiloidose por Transtirretina," "Tratamento," and "Eficácia" were used, along with their English equivalents ("Transthyretin Amyloid," "Treatment," "Efficacy"). Initially, 565 articles were identified. After duplicate removal, 386 publications were collected. Of these, 215 were assessed for eligibility, resulting in a final selection of 16 articles for the review. Articles published between 2020 and 2025, available free of charge and in full text, were included to ensure alignment with the study objective. **RESULTS:** Early detection of ATTR, combined with targeted therapies, can slow disease progression and improve the well-being of affected individuals. Treatments involving protein stabilizers and protein synthesis inhibitors have shown favorable results. The main findings revealed that four drugs — tafamidis, patisiran, vutrisiran, and inotersen — have been explored as promising therapeutic alternatives for ATTR. However, within specific clinical contexts, research suggests that certain therapies may demonstrate greater effectiveness — a fact that highlights the complex interaction between drug mechanisms and their effects on patients. **CONCLUSION:** The treatment strategies for ATTR currently under evaluation show promising potential to mitigate prognostic implications. However, gaps remain in the contemporary literature, which justifies the need for further studies. Thus, the advancement of new research becomes highly relevant for the future of transthyretin amyloidosis treatment. Despite the findings, the present review revealed gaps in the literature, particularly regarding long-term outcomes, records related to other drug approaches, and the translation of research into economic contexts.

09. EPIDEMIOLOGICAL AND SPATIAL ANALYSIS OF VIRAL HEPATITIS IN THE STATE OF MARANHÃO FROM 2013 TO 2023

Sophia Reis Gomes Aguiar¹, Sabrina Caroline Costa Coelho¹, Vitória Karoline Costa Rodrigues¹ and Luciana Oliveira dos Santos¹

¹ State University of the Tocantina Region of Maranhão.

INTRODUCTION: Viral hepatitis, liver infections caused by viruses A, B, C, D, and E, represent a serious public health problem. In Maranhão, its high incidence reflects socioeconomic inequalities and structural challenges, such as low educational levels, poor sanitation, and limited coverage of prevention and treatment programs. In this context, epidemiological and spatial monitoring is essential to support intervention strategies, particularly in vulnerable areas. **OBJECTIVE:** To analyze the epidemiological profile and spatial distribution of reported cases of viral hepatitis in Maranhão between 2013 and 2023. **METHODS:** This was a descriptive, exploratory, and retrospective study based on secondary data. A total of 4,575 confirmed cases were extracted from the Sistema de Informação de Agravos de Notificação (SINAN) for the period from 2013 to 2023. Variables included sex, age group, educational level, race/skin color, and place of residence. For spatial analysis, geographic coordinates were obtained via the Global Positioning System (GPS), and maps were generated using the Google My Maps platform, enabling visualization of case concentrations by health macro-regions. Data were analyzed using descriptive statistics to identify patterns.

RESULTS: Cases were predominantly observed among mixed-race women aged 20 to 39 years with a high school education. Spatial distribution revealed a higher concentration in the North and South Health Macro-Regions, particularly in the municipalities of São Luís (1,276 cases) and Imperatriz (310 cases), areas of greater population density and vulnerability. Mapping identified critical zones that require intensified surveillance, prevention, and treatment efforts, especially in areas with limited access to healthcare services. These findings underscore the need for territorially focused strategies. **CONCLUSION:** Epidemiological and spatial analysis contributes to addressing viral hepatitis in Maranhão by guiding health policies and actions. The findings highlight the importance of professional training, improved surveillance, and the expansion of prevention and early diagnosis campaigns. Strengthening healthcare networks, along with health education and the promotion of socio-environmental equity, is essential to reducing the disease burden.

10. UPDATES IN THE INDUCTION OF ACUTE KIDNEY INJURY IN ANIMAL MODELS: A SYSTEMATIC REVIEW

Igor Taylon Azevedo Lemos¹, Wanderson Fortes de Sousa¹, Paulo Victor de Aguiar Ribeiro¹, Rafaela dos Reis Araújo¹, Anna Luiza Sobreira Torres¹, and Arthur Serra Neto¹;

¹ Federal University of Maranhão.

INTRODUCTION: Acute kidney injury (AKI) represents a serious health problem, associated with high morbidity and mortality, with pathophysiological mechanisms that are still not fully elucidated. To better understand these mechanisms and explore new therapeutic approaches, animal models have proven to be indispensable tools in preclinical research. Therefore, it becomes essential to discuss the ethics of AKI induction methods in these animals to ensure the utmost respect for their welfare. **OBJECTIVE:** This study aims to review the most recent techniques used to induce renal injury in rats and to critically analyze AKI induction strategies in animal models, seeking to contribute to the regulation of AKI induction models within the context of biomedical research. **METHODS:** This research consists of an integrative literature review using the PubMed database. The descriptors "wistar rats," "induced," "acute kidney injury," and "experimental" were used, combined with the Boolean operator "and." A total of 377 articles were found, of which 19 remained after applying the inclusion criteria: published between 2020 and 2024, containing the descriptors in the title or abstract, being freely accessible, and fitting the proposed objectives of the study. **RESULTS:** Among the 19 selected articles, 4 authors described surgical techniques for AKI induction—1 involving ureteral obstruction and 3 involving renal artery obstruction. In ischemic AKI, the technique of right kidney removal and atraumatic occlusion of the left renal artery for 45 minutes proved to be the most severe model for studying ischemia/reperfusion. In total, 15 studies presented drug-induced models, which implied a higher level of refinement in experimental ethics. Additionally, 8 studies did not specify or failed to describe in detail the euthanasia method employed. **CONCLUSION:** The results indicate that different experimental models of AKI have been used to simulate renal injury mechanisms. However, despite the refinement observed in some studies, the lack of standardization in euthanasia methods and the insufficiently detailed descriptions of practices highlight the need for greater methodological and ethical rigor in experimental research on AKI induction.

11. METHODS OF INDUCTION OF PEPTIC ULCER IN RATS: REVIEW OF PROTOCOLS AND ETHICAL PERSPECTIVES

Isabela Marinho da Cunha¹, Wanderson Fortes de Sousa¹, Rafaela dos Reis Araújo¹, Igor Taylon Azevedo Lemos¹, Anna Luiza Sobreira Torres¹, Maria Fernanda Lauande Cardoso Lima¹ and Arthur Serra Neto¹;

¹ Federal University of Maranhão.

INTRODUCTION: Peptic ulcers (PU) are defects in the gastrointestinal mucosa that extend through the muscularis mucosae, from the lamina propria and submucosa to the deeper layers of the wall. Epidemiologically, they represent a major health problem, associated with high morbidity and significant global economic impact. In this context, experimental models using laboratory rats have been widely employed to investigate the pathophysiological mechanisms of the disease, as well as to develop new therapies. Thus, it is necessary to discuss the ethics of peptic ulcer induction methods in these animals to ensure the utmost respect for their welfare.

OBJECTIVE: To review the main experimental protocols for PU induction in rats described in the scientific literature from 2020 to 2024, emphasizing the standardization of methods and the ethical aspects involved, aiming to contribute to the improvement of experimental practices in this field. **METHODS:** This study consists of an integrative literature review based on the PubMed database. The descriptors "wistar rats," "induced," "peptic ulcer," and "experimental" were used, combined with the Boolean operator "and." A total of 505 articles were found, of which 14 met the inclusion criteria: published between 2020 and 2024, containing the descriptors in the title or abstract, freely accessible, and consistent with the objectives of this study. **RESULTS:** In recent years, several experimental methods have been used for PU induction in animal models. Among the 14 selected studies, 7 used oral or intraperitoneal administration of indomethacin (20–30 mg/kg). Two studies used oral administration of absolute ethanol (10 mL/kg). Oral administration of aspirin (250 mg/kg), as well as the use of acetic acid (40%) injected directly into the gastric mucosa, were applied in 1 and 2 studies, respectively. Furthermore, surgical induction through pyloric ligation and the water-immersion restraint stress model were each employed in 1 of the remaining 2 studies. **CONCLUSION:** Each method presents specific advantages and is chosen according to the objectives of the study. A preference for chemical induction methods over surgical approaches was observed, along with a trend toward reducing the doses of the substances used—always emphasizing ethics and animal welfare.

12. EPIDEMIOLOGICAL ANALYSIS OF DEATHS FROM HEPATIC AND BILIARY TRACT NEOPLASMS IN NORTHEASTERN BRAZIL AND MARANHÃO, 2019–2023

Hândrya Karla Martins Gomes¹, Gabriel Ramos Goulart¹, Anna Luiza Sobreira Torres¹, Davi Henrique Palácio Silva¹, Maria Stephany Costa Soares¹, Enzo Gabriel Sousa Pestana¹ and Gutemberg Fernandes De Araujo¹.

¹ Federal University of Maranhão

INTRODUCTION: Malignant neoplasms of the liver and intrahepatic bile ducts represent significant causes of cancer mortality in Brazil. With a silent progression and generally late diagnosis, they present high lethality. In Northeastern Brazil, particularly in the state of Maranhão, the impact of these diseases is exacerbated by regional disparities in access to diagnosis and treatment. **OBJECTIVE:** In this context, the aim of the study is to describe the profile of deaths associated with these neoplasms in Northeastern Brazil and

Maranhão between 2019 and 2023, contributing to more effective and regionally tailored public health actions. **METHODS:** This is a descriptive and ecological study analyzing the sociodemographic profile of patients with malignant neoplasms of the liver and bile ducts in Northeastern Brazil and Maranhão from 2019 to 2023. Data were obtained from the Mortality Information System (SIM), available through the Department of Informatics of the Brazilian Unified Health System (DATASUS). Variables analyzed included sex, race/skin color, age group, educational attainment, and distribution by state. Data were organized using Microsoft Excel 2016 and R Studio software for analysis through calculations of absolute and relative frequencies. **RESULTS:** Between 2019 and 2023, the Northeastern region recorded 13,505 deaths. Maranhão accounted for 1,520 (11.2%) of these deaths, ranking behind Bahia (3,668) and ahead of Sergipe (460). There was a slight predominance of males both in the Northeast (53.2%) and in Maranhão (51.8%). Most deaths occurred among older adults: approximately 75% were aged over 60 years. In Maranhão, the peak was observed between 60 and 69 years (28.4%). Low educational attainment was strongly associated with mortality: 63.5% of deaths in the Northeast and 73.4% in Maranhão occurred among individuals with up to seven years of schooling. Regarding race/skin color, self-declared mixed-race (brown people) individuals accounted for the majority of deaths in both the Northeast (64.1%) and Maranhão (66.3%). White individuals represented 25.1% and 20.8%, respectively, while black individuals accounted for 10.2% in the region and 11.9% in the state. **CONCLUSION:** The analysis of deaths revealed a pattern concentrated in population groups marked by greater social vulnerability. The predominance of deaths among older adults, individuals with low educational attainment, and mixed-race individuals suggests that socioeconomic factors continue to play a decisive role in mortality from these neoplasms. In this context, the findings of this study contribute to the recognition of regional health disparities and may support strategies that are more responsive to local realities.

13. SOCIAL DETERMINANTS OF HEALTH AND PENILE CANCER: BARRIERS TO EARLY DIAGNOSIS

Juliana de Oliveira Ramos Maia¹, Sophie Marie Machado Aragão¹, Lara Carvalho Ferreira Medeiros¹ and Bruno Luciano Carneiro Alves de Oliveira¹.

¹ Federal University of Maranhão.

INTRODUCTION: Penile cancer is a malignant neoplasm that affects the male reproductive and urinary organs. It is more prevalent in low and middle-income regions and is associated with social vulnerability, poor hygiene, and sexually transmitted infections. Early diagnosis is crucial for a better prognosis, as delays in seeking care can lead to advanced stages and invasive treatments, including amputations. The cultural representation of masculinity and social and economic barriers are important to discuss the challenges in accessing health care and promoting early diagnosis. **OBJECTIVE:** Analyze the cultural and socioeconomic determinants of penile cancer in primary care in Brazil. **METHODS:** This is an integrative review with a search for articles conducted in the SciELO, PubMed, and Google Scholar databases. The search strategy used the following descriptors: "Penile Cancer" AND "early diagnosis" AND "social barriers." Publications in Portuguese or English published between 2020 and 2025 were included, and articles that were not directly related to the study subject were excluded. **RESULTS:** The articles demonstrated that the main barriers to early diagnosis of penile cancer are cultural, social, and economic issues. The stigma related to masculinity contributes to

men adopting an invulnerable stance, making it difficult for them to seek health services and express their needs in Primary Health Care (PHC). Furthermore, the fragility of PHC coverage in early diagnosis reflects the socioeconomic conditions of the most affected areas, which are usually regions most affected by poverty and a lack of education on health behaviors, such as the importance of circumcision, protected sex, and proper genital hygiene. These risk behaviors make these areas more prone to aggressive and irreversible penile cancer. **CONCLUSION:** Thus, the results highlighted the importance of addressing social, economic, and cultural determinants in order to expand quality care for those affected. Penile cancer remains a health problem in Brazil, especially in vulnerable regions. The disease has consequences for men's physical health, mental health, and self-esteem, and early diagnosis in PHC is essential to ensure comprehensive care.

14. COMPLICATIONS AND PREVENTION PROCEDURES FOR HOSPITAL INFECTIONS: AN INTEGRATIVE REVIEW OF THE PERIOD 2019-2025

Alice Beatriz Tomaz Tavares¹, Beatriz Mota Moreno¹, Stefanny Rafaely Freitas Garcia², Kivia Mayana Santos de Oliveira¹ and Thalita Santana Conceição¹.

¹ Federal University of Maranhão.

INTRODUCTION: Despite being an ideal place for healthcare, the hospital environment, especially Intensive Care Units (ICUs), poses a high risk for the development of Healthcare-Associated Infections (HAIs). In the context of patients with immunocompromised conditions, this complicates clinical and therapeutic management and poses a risk to the well-being of healthcare professionals. **OBJECTIVE:** Identify the main complications of hospital infections in ICU patients and determine preventive measures to be adopted. **METHODS:** This is an integrative review of articles published between 2019 and 2025 in the EMBASE, PubMed, and BVS databases. The following descriptors were used, extracted from DeCS/MeSH (Health Sciences Descriptors): ("Opportunistic Infections") AND ("Hospital Care") AND ("Disease Prevention"), in Portuguese and English. **RESULTS:** Twelve articles were included in the research. HAIs are most often related to serious illnesses, clinical and surgical interventions, which can present complications, and a longer hospital stay. These factors expose patients to and increase their susceptibility to infections from hospital-acquired pathogens, which, in turn, tend to be more resistant to the control measures applied, favoring increased morbidity and mortality among patients and hindering a good clinical outcome. Furthermore, HAIs significantly impact the financial sector, as they increase hospitalization costs and reduce the number of available beds, interfering with the quality of care and assistance. Therefore, and with the aim of preventing HAIs, clinical and surgical protocols include measures that aid in damage control, such as rigorous and precise management and adequate sanitation of cavities to receive invasive devices, such as probes and catheters; daily cleaning of the patient; and continuous surveillance and documentation of the patient's signs and symptoms. **CONCLUSION:** HAIs represent an obstacle to ICU care. Their main complications include clinical worsening in hospitalized patients, the spread of resistant microorganisms, and reduced bed availability. Therefore, healthcare professionals must always prioritize preventive measures such as hand hygiene, use of appropriate PPE, and rigorous handling of hospital equipment.

15. SOCIODEMOGRAPHIC PROFILE OF PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION IN A TERTIARY CARE HOSPITAL

Sara Raquel Ribeiro Pires¹, Pedro Massagli Yamada¹, Mariana Guimarães Rocha¹, Samyra Elouf dos Santos Simão¹, Eliosmar da Cruz Filho¹, Alexia Carolina Freire Silva De Almeida¹, and José Albuquerque de Figueiredo Neto¹.

¹Federal University of Maranhão.

INTRODUCTION: Heart failure with reduced ejection fraction (HFrEF) is a multifactorial syndrome that compromises the heart's ability to pump blood effectively, representing a significant public health problem. In this context, identifying the sociodemographic profile of patients affected by this condition and treated at a referral outpatient clinic in the state of Maranhão is essential to inform health planning and intervention strategies aimed at reducing complications associated with the disease. **OBJECTIVE:** To describe the sociodemographic profile of HFrEF patients treated at a cardiology outpatient clinic of a tertiary hospital in the state of Maranhão. **METHODS:** This is a cross-sectional, retrospective, descriptive study with a quantitative approach. Primary data collection was performed with HFrEF patients treated at the cardiology outpatient clinic of a tertiary hospital between 2021 and 2023. The variables analyzed were "sex," "age group," "race/skin color," "place of residence," "marital status," and "education level." Data were tabulated in an Excel spreadsheet for descriptive statistical analysis. The study was approved by the Research Ethics Committee (CAAE: 25756919.9.2004.5086). **RESULTS:** A total of 164 patients with heart failure with reduced ejection fraction (HFrEF) were analyzed. The majority were male (70.7%) and between 60 and 69 years old (29.3%), followed by 50 to 59 years old (22.6%). Regarding color/race, 60.4% self-identified as mixed race (brown), 22% as black, and 15.9% as white. Concerning residence, 54.3% lived in the capital, 34.8% in the interior of the state, and 10.4% in the Grande Ilha region. The majority of patients were married (48.8%), followed by single individuals (25%). In terms of education, 36.6% had incomplete elementary education and 28.7% had completed high school, while 8.5% were illiterate. **CONCLUSION:** Therefore, it is concluded that the profile most affected by heart failure with reduced ejection fraction in the demonstrated sample corresponds to brown men, aged between 60 and 69, married, with low education, and residing in São Luís. Understanding this profile contributes to the development of public health policies and strategies aimed at preventing the disease and raising awareness of its risk factors, enabling the implementation of targeted actions for this population. Such measures may consequently promote early diagnosis and treatment, thereby reducing the impacts and complications associated with the condition.

16. ASSOCIATION BETWEEN CHRONIC COMORBIDITIES AND HOSPITALIZATION IN PATIENTS WITH HEARTH FAILURE

Samyra Elouf dos Santos Simão¹, Alexia Carolina Freire Silva de Almeida¹, Daniele Beatriz Almeida da Silva¹, Maria Júlia de Sena Lopes¹, Mariana Guimarães Rocha¹, Paulo Victor de Aguiar Ribeiro¹ and José Albuquerque de Figueiredo Neto¹.

¹Federal University of Maranhão.

INTRODUCTION: Heart Failure (HF) is a highly prevalent and complex clinical condition, characterized by the heart's inability to maintain the cardiac output adequate to the body's metabolic needs. Patients with HF frequently present multiple chronic comorbidities, such as systemic arterial hypertension (SAH), diabetes mellitus (DM)

and chronic kidney disease (CKD), that contribute to the disease's progression, increase of the symptoms and higher risk of hospitalization. Understanding the relation between these comorbidities and the clinical outcomes is fundamental for planning more efficient and focalized therapeutic strategies. **OBJECTIVE:** To investigate the prevalence and association between chronic comorbidities and occurrence of hospitalization in patients with HF. **METHODS:** This is an analytic, transversal and retrospective epidemiological study. The data were collected among patients with HF who were in medical monitoring in a cardiology ambulatory of a tertiary hospital from 2021 to 2024. Were considered for the analysis comorbidities present among the patients with HF. The prevalence and correlation with each one with the number of admissions was analyzed through Pearson's correlation. The statistical analysis was made using the RStudio program. This paper was approved by the Ethical Committee in research under the number 25756919.9.2004.5086. **RESULTS:** There was observed a high prevalence of comorbidities in patients diagnosed with HF, with emphasis to SAH (63,5%), consumption of alcoholic drinks (61,0%), smoking (46,9%), dyslipidemia (40,7%) and DM (29,2%). Besides, the correlation between the clinical conditions and hospitalization showed as main positive associations: depression ($r = 0,151$), the comorbidity that, among those evaluated, had the highest number of hospital admissions, followed by smoking ($r = 0,143$), e SAH ($r = 0,118$) e, as main negative associations: dyslipidemia ($r = -0,058$), anemia ($r = -0,054$) and CKD ($r = -0,044$). **CONCLUSION:** Therefore, it can be concluded that the most prevalent comorbidities among patients with HF are SAH, alcoholism, smoking and dyslipidemia, whilst the the one with most correlation to hospital admissions was depression, suggesting significative impact of mental health on the clinical management of HF, wich reenforces the importance of preventive and therapeutic strategies to control this comorbidity, in order to reduce admissions and increase the patients quality of life.

17. CIRRHOSIS AND INTESTINAL DYSBIOSIS: CLINICAL COMPLICATIONS AND PROBIOTIC THERAPIES

Evilly Cutrim Vaz¹, Ana Clara Canuto Tanios¹, Anna Thereza Coelho Leda Diniz¹, Maria Eduarda Sousa Reis¹, Mariana Thereza Carneiro de Morais¹, Pedro Felipe Leitão Alves¹ and Mayara Soares Cunha Carvalho¹.

¹Federal University of Maranhão.

INTRODUCTION: Intestinal dysbiosis is commonly observed in patients diagnosed with cirrhosis due to the alterations in gastrointestinal physiology caused by liver damage. In this context, the presence of dysregulated gut microbiota in cirrhotic patients and its impact on the negative prognosis of liver disease raise the following question: how does intestinal dysbiosis exacerbate cirrhosis, and how can probiotics be effective in addressing this issue? **OBJECTIVE:** To analyze the influence of intestinal dysbiosis on the worsening of clinical conditions in cirrhotic patients and to assess the potential relevance of probiotic therapy in this context. **METHODS:** This study is an integrative literature review based on the development of a guiding research question. Articles published between 2020 and 2025, written in Portuguese or English, and classified as Qualis A or B, were included. The databases consulted were PubMed (Public Medline), Google Scholar, and Scopus. The following descriptors were used: "cirrhosis," "dysbiosis," "probiotics," "complications," and "liver cirrhosis." A total of 22 articles were initially identified; after applying the inclusion criteria, 13 were selected for analysis. **RESULTS:** Cirrhotic patients exhibited distinct alterations in gut microbiota composition. A relationship was observed between

cirrhosis progression and an increased abundance of *Streptococcaceae* and *Porphyromonadaceae*, along with a reduction in *Lachnospiraceae* and *Ruminococcaceae* populations. This pattern may explain the decreased genetic diversity of fecal microbiota in patients with decompensated cirrhosis compared to those with compensated disease. A clear association was found between the severity of hepatic injury and the degree of intestinal dysbiosis, with higher mortality rates reported among patients presenting with severe microbiota dysregulation. Seven major complications were identified: hepatic vein thrombosis, spontaneous bacterial peritonitis, hepatic encephalopathy, portal hypertension, hepatorenal syndrome, and sarcopenia. In this regard, probiotics have emerged as a potential therapeutic alternative, demonstrating benefits such as reductions in anthropometric parameters, cholesterol and ammonia levels, and the progression of hepatic encephalopathy. The use of mixed probiotic strains proved to be the most effective approach. **CONCLUSION:** This review reinforces the relationship between gut microbiota composition and the severity of hepatic cirrhosis, highlighting significant complications and the association between the degree of dysbiosis and disease indicators. Probiotic supplementation appears to be a promising intervention for mitigating functional alterations and preventing cirrhosis-related complications.

18. ASSOCIATION BETWEEN BMI AND MENSTRUAL IRREGULARITY IN YOUNG WOMEN

Anna Luiza Sobreira Torres¹, Lucas Clovisan Camargo Santos¹, Isabelle Vitória Rocha da Silva¹, Caroline Moreira de Souza¹, Maria Clara Santos Araújo¹ and Jorge Antônio Teixeira Meireles¹.

¹ Federal University of Maranhão.

INTRODUCTION: Body mass index (BMI) is the ratio of body weight to height, which helps figure out a healthy weight range for each person. It can be used to see if someone is overweight or obese, a condition that represents a serious public health problem and is directly related to the development of gynecological conditions such as infertility and menstrual dysfunction. **OBJECTIVE:** This study aims to investigate the association between body mass index (BMI) and the occurrence of menstrual irregularities in young women, analyzing potential correlations between nutritional status and the menstrual cycle. **METHODS:** This is an integrative review of the literature available from the PubMed, Google Scholar, SciELO, and LILACS databases, using the descriptors "Body Mass Index," "Menstrual Disorders," "young women," "Young Adult," and "menstrual irregularity" combined by the Boolean operator "AND" and delimiting articles published between 2015 and 2025. Twenty-five articles in Portuguese, English, and Spanish were chosen for analysis, of which six were selected and the remaining 19 were discarded for not meeting the study objective or for being duplicates. **RESULTS:** Findings from the review show a significant association between BMI and menstrual irregularity in young women. Both excess and insufficient weight increase the prevalence of disorders such as amenorrhea, dysmenorrhea, anovulation, and infertility. In addition, studies suggest that these menstrual changes may reflect systemic hormonal imbalances, serving as early markers of health disorders such as polycystic ovary syndrome, insulin resistance, and cardiovascular risk. **CONCLUSION:** All the evidence analyzed highlights how important it is to consider nutritional status when looking into menstrual disorders in young women. BMI, as it reflects imbalances that go beyond body weight, is a useful tool for early detection of changes in the menstrual cycle and can assist in

screening for hormonal and metabolic dysfunctions that affect gynecological health.

19. EPIDEMIOLOGY OF CONGENITAL ANOMALIES IN BRAZIL AND MARANHÃO: COMPARATIVE ANALYSIS OF SINASC DATA (2014–2023)

Caroline Moreira de Souza¹ and Luz Marina Gómez Gómez¹.

¹Federal University of Maranhão.

INTRODUCTION: Congenital anomalies are significant causes of infant morbidity and mortality worldwide, with an estimated 276,000 neonatal deaths annually. In Brazil, these conditions accounted for 18.2% of infant deaths in 2022. Regional disparities in access to health services and diagnostic capacity may influence both the occurrence and notification of congenital anomalies. **OBJECTIVE:** To analyze the prevalence of congenital anomalies in Brazil and Maranhão from 2014 to 2023, identifying associated maternal and neonatal characteristics. **METHODS:** Retrospective epidemiological study using data from the Live Birth Information System (SINASC/DATASUS). All live births recorded between 2014–2023 were included. Variables analyzed: presence and type of congenital anomaly (ICD-10), type and duration of pregnancy, birth weight, newborn sex, and maternal race/ethnicity. Prevalence with 95% CI was calculated, along with chi-square and Z-tests for independent proportions. **RESULTS:** Overall prevalence was 0.87% (95% CI 0.868–0.875) in Brazil and 0.50% (95% CI 0.484–0.511) in Maranhão ($p < 0.001$). In Maranhão, neural tube defects and musculoskeletal malformations were proportionally more frequent, while circulatory anomalies were less reported. Preterm births and extreme birth weight categories were more prevalent in Maranhão. Demographic differences were also observed, with higher proportions of mothers self-identified as "parda" (mixed race). **CONCLUSION:** Significant differences were identified in the prevalence and profile of congenital anomalies between Brazil and Maranhão, which may reflect both true epidemiological variations and diagnostic or reporting inequalities. Findings highlight the need to strengthen epidemiological surveillance, prenatal care, and early diagnosis policies for congenital anomalies in Brazil.

20. EPIDEMIOLOGY OF NECK FRACTURES IN THE STATE OF MARANHÃO: EVALUATION OF EPIDEMIOLOGICAL DATA FROM 2020 TO 2025.

Carlos Daniel Lobato da Costa¹, Luana Coimbra Furtado¹, Samira Leite da Silva¹, Luanna Cristina Barros de Carvalho¹, Sávio Leite da Silva¹, Yan Chagas Lopes¹, and Amanda Namibia Pereira Pasklan¹.

¹ Federal University of Maranhão.

INTRODUCTION: Neck fractures are most commonly associated with car accidents or other acute traumatic events, such as certain contact sports. In general, the mechanism associated with neck fractures involves high energy axial loading. **OBJECTIVE:** Due to the anatomical structure, with the passage of large vessels and important nerve branches, understanding neck fractures is important. Therefore, the objective of this study is to understand the epidemiological aspects of neck fractures in the state of Maranhão. **METHODS:** The work in question consists of a retrospective study based on secondary data, which are available in the database of the Department of Informatics of the Unified Health System (DATASUS) in terms of Hospital Morbidity by place of hospitalization in Maranhão and the ICD-10 Morbidity List. For a more in-depth analysis of the data, the variables Municipality, Year, Gender, Age Group 1, and Ethnicity were used, in addition to the period from May 2020 to May 2025. **RESULTS:** During the period analyzed, 2,156 cases of neck, chest, or

pelvic fractures were reported in the state of Maranhão. Most of the notifications occurred in the state capital (1,038; 48.14%), São Luís, with a predominance in the male population (1,046; 76.35%) and mixed-race population (1,294; 60.02%). Regarding age groups, there was an equal number of reports in the 30-39 and 40-49 age groups (423; 19.62%) and in the year 2023 (507; 23.52%). **CONCLUSION:** Given the high morbidity and mortality rates associated with neck fractures, the notification of 2,156 cases over a five-year period makes this a public health issue, especially since it affects economically active age groups. The predominance among males and brown-skinned individuals is likely due to the population profile, as well as greater exposure to risk situations, such as traffic. The higher incidence in the city of São Luís can be understood by the fact that it is the state capital, as well as the city with the highest population density. Regarding the year, it is understood that the number of reports may be related to the greater lifting of restrictions after the COVID-19 pandemic. Finally, understanding the epidemiological profile of neck fractures in the state of Maranhão is necessary due to the need to develop public safety measures that allow for greater protection of the population.

21. EPIDEMIOLOGICAL ANALYSIS OF RHEUMATOID ARTHRITIS IN THE STATE OF MARANHÃO

Carlos Daniel Lobato da Costa¹; Luana Coimbra Furtado¹; Beatriz Santos Pinheiro¹; Samira Leite da Silva; Luanna Cristina Barros de Carvalho¹; Sávio Leite da Silva¹ and Amanda Namíbia Pereira Pasklan¹.

¹Federal University of Maranhão.

INTRODUCTION: Rheumatoid arthritis is a chronic painful syndrome that mainly affects the joints. Understanding the epidemiological profile of rheumatoid arthritis (RA) enables more targeted clinical reasoning for the early identification of early and late changes related to the disease. **OBJECTIVE:** To analyze the epidemiological aspects related to rheumatoid arthritis (RA) in the state of Maranhão. **METHODS:** This is a retrospective study based on secondary data collected from the database of the Department of Informatics of the Unified Health System (DATASUS) on hospital morbidity. To obtain the data, the period from December 2019 to December 2024 was selected, choosing ICD 10 M06, corresponding to rheumatoid arthritis and other inflammatory polyarthropathies. **RESULTS:** In the state of Maranhão, between December 2019 and December 2024, 3,286 new cases of RA were reported. The distribution of reported cases shows that 1,673 (50.91%) were women and 1,613 (49.09%) were men, with a predominance of the brown population with 2,346 (71.39%) and the age group between 40 and 49 years old with 550 (16.79%) people affected, followed by those between 50 and 59 years old with 498 (15.16%) records. Regarding the location of care, there was a concentration of cases in the capital of Maranhão with 582 (17.71%). **CONCLUSION:** The uniformity between the genders affected by RA in Maranhão may be due to the characteristics of the population. Unlike the Brazilian and global situation, no significant difference was observed in the state between women and men affected by RA, but the data on race and age group are similar to the reality of the country. Regarding age group, the diagnosis of RA tends to occur in adulthood due to the period of disease progression. As for notification by city, the predominance in São Luís is possibly due to population density, as well as the city being the state's reference city. Therefore, it is essential to evaluate the epidemiological aspects attributed to RA, especially in Maranhão, given the lack of updated statistical data for planning public health measures that optimize the diagnosis and control of the deformities caused by the disease.

22. EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH VENOUS THROMBOSIS IN MARANHÃO FROM 2019 TO 2025

Ana Clara Canuto Tanios¹, Emanuele Camile Cardoso Carvalho¹, Ana Clara Carvalho Barroso¹, Nicollas Barroso de Oliveira Pereira¹, Leandro Moreno da Cruz¹, Bruno Eduardo Lopes de Macêdo¹ and Vanisse Portela Ramo¹.

¹Federal University of Maranhão.

INTRODUCTION: Deep vein thrombosis (DVT) is characterized by the formation of thrombi within the deep veins with partial or total obstruction of the vessel, occurring mainly in the lower limbs. This condition is one of the leading causes of hospital and outpatient morbidity, significantly impacting mortality statistics. **OBJECTIVE:** This study aimed to analyze the epidemiological profile of patients with DVT in Maranhão (2019-2025) in order to guide public health policies in the state. **METHODS:** This is a descriptive epidemiological study based on hospital morbidity and mortality data from the Department of Informatics of the Unified Health System (DATASUS). The sample included patients of all age groups hospitalized for venous thrombosis in Maranhão between January 2019 and May 2025. The variables "health micro-regions," "year of care," "age group," "gender," "color/race," and "deaths" were used. **RESULTS:** During the study period, 3,187 hospitalizations and 83 deaths due to phlebitis, thrombophlebitis, embolism, and venous thrombosis were recorded in Maranhão, with a mortality rate of 2.6%. An increasing trend in hospitalizations and deaths was observed, reaching peaks in 2023-2024, indicating a progressive worsening of the scenario. Women predominated in hospitalizations (58.9%), but men had higher mortality (53.0%) and lethality (3.36% versus 2.08% in women), suggesting a more severe clinical outcome. The adult population (30-69 years) was the most affected, accounting for 63.4% of hospitalizations, with the highest incidence in the 40-49 age group, followed by the 60-69 age group. Brown-skinned individuals were the majority among hospitalizations (89.2%), reflecting the local demographic profile; however, 31.1% of records were incomplete. São Luís (33.0%) and Imperatriz (15.2%) accounted for almost half of the hospitalizations, suggesting centralization of diagnosis and possible underreporting in more remote regions. **CONCLUSION:** Data analysis showed a progressive increase in morbidity and mortality, peaking in 2023 and 2024, which account for almost half of the recorded deaths. The overall case fatality rate was 2.6%, higher among men (3.36%) than women (2.08%). Hospitalized patients were predominantly women, adults (30-69 years old, peaking at 40-49), and self-declared brown. The concentration of cases in the micro-regions of São Luís and Imperatriz points to greater access to diagnosis in these locations, suggesting possible underreporting in peripheral regions.

23. HORMONE REPLACEMENT THERAPY IN MENOPAUSE: CARDIOVASCULAR RISKS VERSUS METABOLIC BENEFITS

Paola Pereira Melo¹, Isabelle Vitória Rocha da Silva¹, Lara Kananda Moraes Sena², Maria Júlia de Sena Lopes¹ and Iracelle Carvalho de Abreu¹.

¹ Federal University of Maranhão.

² Florence University Center.

INTRODUCTION: Menopause is characterized by the definitive cessation of menstruation and a decrease in estrogen and progesterone levels, leading to metabolic changes such as insulin resistance, dyslipidemia, and increased abdominal fat, as well as an elevated cardiovascular risk. Menopausal hormone therapy (MHT) is

recognized for alleviating climacteric symptoms and providing metabolic benefits, but its impact on cardiovascular events remains debated. **OBJECTIVE:** The present study aims to analyze the cardiovascular risks and metabolic benefits of MHT, considering the formulation, route, and timing of therapy initiation. **METHODS:** This is an integrative review in which 20 full-text articles were selected from the PubMed, ScienceDirect, and BMC Women's Health databases, published in the last five years. Randomized clinical trials, systematic reviews, and observational studies discussing the metabolic and cardiovascular effects of MHT were included. The analysis was descriptive and interpretative, focusing on comparative data regarding formulations, routes, and timing of therapy initiation. **RESULTS:** MHT did not increase all-cause mortality or cardiovascular events when initiated early, before the age of 60 or within 10 years after menopause, supporting the "timing hypothesis." When initiated later, there was an increased risk of stroke (RR = 1.23) and venous thromboembolism (RR = 1.86). The transdermal route, particularly at doses below 50 µg/day and combined with micronized progesterone, demonstrated greater vascular safety compared to the oral route or the use of medroxyprogesterone acetate. From a metabolic perspective, menopausal hormone therapy promoted reductions in LDL-C, increases in HDL-C, improved insulin sensitivity, and decreased abdominal fat, with up to a 30% reduction in the incidence of type 2 diabetes. There was also a significant improvement in flow-mediated dilation (FMD). Evidence indicates that early initiation of MHT is associated with lower rates of cardiac events and an overall better metabolic profile. **CONCLUSION:** MHT, when initiated early and using safe formulations, plays an important protective role in metabolism and the cardiovascular system. The transdermal route combined with micronized progesterone is the safest strategy, especially for women with thrombotic risk. MHT has a positive impact on cardiometabolic outcomes and could be considered for primary cardiovascular prevention.

24. HOSPITALIZATIONS FOR CEREBRAL PALSY AND OTHER PARALYTIC SYNDROMES IN BRAZIL FROM 2015 TO 2024

Samuel Victor Soares De Carvalho¹, Osean Maximilyan Câmara Pereira¹, Marcello De Freitas Costa Rodrigues Filho¹, and Consuelo Penha Castro Marques¹.

¹Federal University of Maranhão.

INTRODUCTION: Cerebral palsy (CP) is characterized as a syndrome caused by damage to the immature brain. Like other paralytic syndromes, it interferes with motor and instinctive physiological adaptability in children. It manifests as differences in posture, reflexes, and coordination, which are consistent with abnormal and dysfunctional postural tone. Socioeconomic differences are a risk factor for cerebral palsy due to greater exposure to toxic and infectious agents by the baby, hypoxemia, or trauma during the prenatal/postnatal period. **OBJECTIVE:** To investigate hospitalizations for cerebral palsy and other paralytic syndromes in Brazil from 2015 to 2024. **METHODS:** This is an ecological, quantitative, descriptive, time series study (2015-2024) on cerebral palsy and other paralytic syndromes, with secondary data extracted from the Hospital Information System of the Unified Health System (SIH/SUS)-TABNET/DATASUS. The variables studied were: hospitalizations, region, year, age group, sex, and color/race, total value, and average value. Data extracted from SIH/SUS were exported to Excel and tabulated, with results expressed in absolute numbers and frequencies. **RESULTS:** There were n=91,727 hospitalizations for

these conditions from 2015 to 2024. There was a downward trend from 2015 to 2020 and an upward trend from 2021 onwards, peaking in 2015 (n=12,326) hospitalizations. The Southeast region ranked first with n=39,955 cases. The most affected gender was male, with 62.9% (n=57,771). Most frequent in the age group: 20 to 29 years (n=13,814) hospitalizations; race: no information (n=44,370), followed by brown (n=21,935) hospitalizations. The total amount spent was n=R\$481,127,573.30 and the average amount was n=R\$5,245.21. **CONCLUSION:** Hospitalizations for cerebral palsy and other paralytic syndromes showed a downward trend until 2020, after which they have shown continuous growth. They were more frequent in the Southeast, among males, those of unknown race and brown-skinned individuals, in the 20-29 age group, with a high amount invested by the health system. Demonstrating the possibility of reducing cases, therefore, public health actions are required to minimize such events through health promotion measures, professional training and community awareness, improved prenatal care, and better outpatient and home care for those affected by such pathologies.

25. DEATHS FROM MYASTHENIA GRAVIS IN BRAZIL FROM 2014 TO 2023

Samuel Victor Soares De Carvalho¹, Osean Maximilyan Câmara Pereira¹, Marcello De Freitas Costa Rodrigues Filho¹, and Consuelo Penha Castro Marques¹

¹ Federal University of Maranhão.

INTRODUCTION: Myasthenia gravis (MG) is an autoimmune disease with an etiology that remains unclear and is considered a rare disease. Although rare, an increase in its prevalence has been described in the literature, which may be associated with improved diagnostic advances. It is characterized by the production of specific autoantibodies against nicotinic acetylcholine receptors (AChR) at the neuromuscular junction (NMJ), with constant immune attack, which leads to receptor dysfunction, contributing to neuromuscular non-transmission and triggering clinical implications, such as progressive myasthenia and musculoskeletal asthenia. **OBJECTIVE:** To analyze the epidemiological profile of deaths from myasthenia gravis in Brazil from 2014 to 2023. **METHODS:** This is an ecological, descriptive, quantitative study with secondary data obtained from the Hospital Information System of the Unified Health System (SIH/SUS), available on TABNET/DATASUS, covering the period 2014-2023. The variables analyzed were: region, year, gender, race/color, age group, education level, and place of occurrence. The data were tabulated in Excel and expressed in absolute numbers and frequencies. **RESULTS:** There were n=1730 deaths by MG in Brazil in the 10 years under study. The most prevalent region was the Southeast (n=870), followed by the Northeast (n=353), South (n=283), Midwest (n=139), and North (n=85) deaths. There was an oscillating trend over the period from 2014 to 2016, from 2017 to 2019 there was an increasing trend, with a decline in 2020 and new growth from 2021 to 2023. Females predominated with (n=890) equivalent to 51.44%. The white race was more prevalent (n=1182), followed by brown (n=410) deaths per MG. The 70-79 age group (n=391) deaths stood out. Eight to 11 years of schooling was more frequent (n=420), less than 3 years of schooling (n=394), and 4 to 7 years of schooling (n=352) deaths. Most deaths occurred in the hospital (n=1395), representing 81% of the sample. **CONCLUSION:** MG is a disease that requires further study to identify its etiopathogenesis and refine its diagnosis. The increasing number of deaths, with periods of fluctuation, suggests improvements in the protocols for caring for these patients, aiming to improve their health and prevent the worsening of the condition that leads to death. Thus,

focusing on preventive measures and improvements in diagnosis and treatment may reduce deaths from this disease.

26. HOSPITAL MORBIDITY FROM ALZHEIMER'S IN BRAZIL FROM 2015 TO 2024

Samuel Victor Soares De Carvalho¹, Osean Maximilyan Câmara Pereira¹, Marcello De Freitas Costa Rodrigues Filho¹, and Consuelo Penha Castro Marques¹.

¹Federal University of Maranhão.

INTRODUCTION: Alzheimer's disease is a neurodegenerative disorder that causes dysfunction in the intraneuronal synaptic process, leading to memory impairment and a cascade of symptoms that can ultimately result in death. Among the clinical manifestations are the incapacitating progression of activities and short- and long-term memory loss, hindering the social, family, and work lives of these individuals. Its main cause is the accumulation of beta-amyloid peptide, which causes changes in cholinergic pathways, with neuronal loss and loss of choline acetyltransferase (ChAT), which in turn decreases the productive capacity of acetylcholine (ACh). This can be minimized by the use of cholinesterase inhibitors in the treatment of mild and moderate cases. **OBJECTIVE:** To study the epidemiological profile of hospital morbidity due to Alzheimer's disease in Brazil from 2015 to 2024. **METHODS:** This is an ecological, retrospective, descriptive, and quantitative study with data on hospitalizations for Alzheimer's disease obtained from the Hospital Information System of the Unified Health System (SIH/SUS), TABNET/DATASUS, Ministry of Health-Brazil, from 2015 to 2024. The variables analyzed were: hospitalizations, region, year, age group, sex, color/race, total value, and average value. The data were tabulated in Excel and expressed in absolute numbers and frequencies. **RESULTS:** There were n=16,030 hospitalizations for Alzheimer's disease in Brazil during this period. There was an oscillating trend in the period 2015-2019 with an upward trend, a downward peak in 2020 (n=1,212 hospitalizations), and a new upward peak starting in 2020, with the highest peak in 2023 (n=2,125 hospitalizations). The most prevalent region was the Southeast (n=8,299), followed by the South (n=3,838), Northeast (n=2,413), Midwest (n=970), and North (n=510) hospitalizations. The most affected age groups were: 50 to 59 years old (n=345); 60 to 69 years old (n=1,503); 70 to 79 years old (n=4,566) and 80 years old and over (n=9,426) hospitalizations. It was more frequent in females, with 65%; in males, with 35% of hospitalizations. The most affected race was white (n=7,880), followed by brown (n=4,004). The total amount spent was n=R\$26,131,808.17, representing an average amount of R\$1,630.18. **CONCLUSION:** Alzheimer's disease has a significant prevalence in the elderly, affects women and Caucasians more, and represents a high cost to the Brazilian healthcare system. It is important to reinforce the importance of care for the elderly, for early diagnosis and treatment, which advocates preventive actions that reduce hospitalizations and improve the quality of life of this population.

27. EXCESSIVE RUNNING AND SILENT HEART DISEASE: RISKS FOR AMATEUR ATHLETES – AN INTEGRATIVE REVIEW

Felipe Dominici Castelo Branco¹, Camilly Veras Ferreira Dos Santos¹, Ana Clara Porto de Sá Ferreira¹, Anna Luiza Menezes Carvalho Teixeira¹, and Mylena Andrea Oliveira Torres¹

¹ University Center of Maranhão

INTRODUCTION: Road running is widely recognized for its benefits to the cardiovascular system and is encouraged as a preventive

strategy against chronic diseases. However, the growing adoption of the practice among amateur athletes, often without specialized guidance, has raised concerns about the impact of excessive exercise on heart health. Recent evidence indicates that intense practice, especially when not accompanied by regular clinical evaluations, can induce subclinical cardiac changes such as myocardial fibrosis, arrhythmias, and hypertrophy, comprising the spectrum of silent heart diseases. **OBJECTIVE:** This study aims to analyze whether amateur athletes undergoing intense running training have a greater risk of developing silent heart disease, compared to sedentary individuals or those who practice moderate running. **METHODS:** An integrative literature review was conducted, and systematic searches for articles published in PubMed, SciELO, and LILACS between January 2020 and July 2025 were performed using controlled descriptors (DeCS/MeSH) in Portuguese and English. Studies involving adults (≥ 18 years) addressing structural or functional myocardial alterations in amateur runners were included. Four independent reviewers conducted screening and analysis of the articles using Rayyan software. Of the 42 studies found, 26 met the established methodological criteria. **RESULTS:** The results indicated a strong association between intense running and the presence of cardiac overload markers, such as elevated troponin levels and morphofunctional changes in imaging studies. The lack of pre-participation screening and lack of awareness of early symptoms favor underdiagnosis of these conditions. **CONCLUSION:** The review showed that intense running, when practiced by amateur athletes without adequate monitoring, is associated with the development of silent heart disease, even in the absence of clinical symptoms. Changes such as myocardial fibrosis and ventricular hypertrophy were recurrent in the studies analyzed. The lack of prior screening and cardiological monitoring contributes to the underdiagnosis of these conditions. Therefore, individualized training, periodic assessments, and greater awareness of the risks are recommended to ensure safe and sustainable sports practice.

28. EPIDEMIOLOGICAL ANALYSIS OF PREMATURE MORTALITY FROM TYPE 2 DIABETES MELLITUS IN BRAZIL (2014-2024)

Eslainy Xavier Matos¹, Guilherme Eduardo Noleto de Sousa Santana¹, Judith Carneiro Maciel¹, Julia Marreiros Silva¹ and Luciana Oliveiras dos Santos¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Type 2 Diabetes Mellitus (T2DM), which accounts for approximately 90% of all diabetes cases, is a chronic metabolic disease associated with insulin resistance and hyperglycemia. It represents a significant global public health issue, particularly due to its contribution to mortality from Noncommunicable Diseases (NCDs). Premature mortality (between 30 and 69 years of age) serves as a strategic indicator for monitoring these diseases. In Brazil, the increase in this indicator reflects inequalities in access to healthcare services, making its monitoring essential for achieving Target 3.4 of the United Nations (UN) 2030 Agenda, which aims to reduce premature mortality from NCDs. **OBJECTIVE:** To analyze the epidemiological profile of premature mortality due to T2DM in Brazil from 2014 to 2024. **METHODS:** A descriptive, retrospective, and quantitative study was conducted based on data from the Ministry of Health's Premature Mortality Monitoring Panel for NCDs. Deaths attributed to T2DM among individuals aged 30 to 69 years were included. The variables analyzed were sex, race/skin color, age group, region of residence, and disease complications. Mortality rates by region were calculated per 100,000 inhabitants. **RESULTS:** During the

period, 46,257 deaths from T2DM were identified in Brazil, representing a 146.13% increase in the absolute number of deaths. Of these, 24,984 (54.0%) occurred in males and 21,271 (46.0%) in females. Mortality was concentrated in older age groups: 60–69 years (58.4%), 50–59 years (28.7%), and 40–49 years (10.3%). Regarding race/skin color, the majority were mixed-race (43.2%) and white individuals (42.7%), followed by black individuals (11%). The Northern Region showed the highest mortality rate (32.74 per 100,000 inhabitants), followed by the Southern (30.33), Central-West (28.72), Northeastern (24.66), and Southeastern (15.29) regions. Among associated complications, renal complications (8,579), multiple complications (4,018), peripheral circulatory complications (2,547), and unspecified complications (3,614) were the most frequent. A total of 20,591 deaths were classified as “without complications,” which may indicate underreporting or misclassification in the cause of death. **CONCLUSION:** There has been a significant increase in premature mortality due to T2DM in Brazil, with a predominance among males, older age groups, and mixed-race and white individuals. Regional disparities highlight the need to strengthen prevention strategies, promote early diagnosis, and expand equity in access to healthcare services.

29. CLINICAL OUTCOMES OF THE TREATMENT OF PATENT DUCTUS ARTERIOSUS: AN INTEGRATIVE REVIEW

Marcos de Jesus Câmara Ferreira¹, Wilker Frainkyli Silva Mendonça¹, Paulo Victor de Aguiar Ribeiro¹, and Vinicius José da Silva Nina¹

¹ Federal University of Maranhão

INTRODUCTION: Patent ductus arteriosus (PDA) is common among premature and very low birth weight newborns, and it is associated with an increased risk of morbidity and mortality. Currently, traditional treatment approaches include pharmacological therapy and surgical closure. **OBJECTIVE:** The objective of this integrative review is to evaluate the clinical outcomes in patients with PDA treated through pharmacological or surgical approaches. **METHODS:** This is an integrative review conducted in accordance with the international guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Searches were performed in the PubMed and SciELO databases using the descriptors: “patent ductus arteriosus” AND “surgical treatment” OR “pharmacological treatment.” Original articles published in the last 10 years (2014–2024) in English and Portuguese were included. Review articles, duplicates, and incomplete studies were excluded. Initially, 84 articles were selected. After analyzing titles and abstracts, 27 studies remained. Following full-text reading based on the exclusion criteria, 18 articles were included in the final sample of this review. **RESULTS:** Early treatment may have a beneficial impact on PDA-related mortality, whereas late management helps prevent excessive pharmacological intervention in cases of spontaneous closure. Early conservative treatment includes indomethacin and ibuprofen, which have shown benefits in reducing the rates of intraventricular hemorrhage. Furthermore, oral paracetamol and ibuprofen have emerged as alternative therapeutic options; however, their adverse effects must be considered, such as hepatic injury, as well as renal and gastrointestinal alterations. If pharmacological therapy proves unsatisfactory, early surgical ligation of the symptomatic ductus arteriosus is indicated; nonetheless, it may lead to complications such as impaired myocardial performance, postoperative hypotension, and bronchopulmonary dysplasia. **CONCLUSION:** PDA in newborns remains a clinical challenge due to its association with high morbidity and mortality rates. The effectiveness of early pharmacological

treatment lies in reducing the need for immediate surgical intervention and in preventing intraventricular hemorrhage, although it carries potential adverse effects. Conversely, surgical closure of the PDA has proven effective but is associated with significant complications. The decision regarding the ideal treatment should take into account both clinical outcomes and potential adverse impacts.

30. EPIDEMIOLOGICAL PROFILE OF TUBERCULOSIS IN PEOPLE DEPRIVED OF LIBERTY IN BRAZIL, 2020–2024

Anna Victória Marques Sousa Pirajá¹, Elosmar da Cruz Filho¹, Juliana Fontes Gondin Silva¹ and Jorge Antônio Meireles Teixeira¹

¹ Federal University of Maranhão

INTRODUCTION: Tuberculosis (TB), an infection caused by bacteria of the *Mycobacterium tuberculosis* complex, is responsible for high global morbidity and mortality. Its distribution is strongly associated with low socioeconomic conditions. In this context, the population deprived of liberty (PDL) constitutes one of the most affected groups, due to prison overcrowding, inadequate ventilation, failures in early detection, and treatment discontinuity. These factors favor the spread of the disease and the maintenance of transmission chains, making prison facilities important foci of TB. **OBJECTIVE:** To describe the epidemiological profile of people deprived of liberty affected by tuberculosis in Brazil between 2020 and 2024. **METHODS:** This is a descriptive epidemiological study with a quantitative approach, based on data obtained from the Department of Informatics of the Unified Health System (DATASUS) for the selected years. The variables analyzed were: year of diagnosis, federative unit, sex, race/skin color, age group, education level, and clinical form of TB. **RESULTS:** A total of 52,671 TB cases were reported among PDL in Brazil between 2020 and 2024. The year 2023 recorded the highest number of cases (11,212), with no significant variation compared to other years. The states with the highest number of notifications were São Paulo (10,633 cases), Rio de Janeiro (9,042), and Pernambuco (5,024). The pulmonary form was the most prevalent (95.7% of cases). Among PDL, males predominated, accounting for 97.4% (n = 51,320) of cases. Most individuals had incomplete primary education (18,575 cases). Regarding race/skin color, 54.1% (n = 28,509) were classified as brown. The most affected age group was 20–39 years (81.8%). **CONCLUSION:** TB remains a serious public health issue among people deprived of liberty in Brazil, with higher concentration in the most populous states of the Southeast region. The profile observed—young, brown-skinned men with low educational levels—demonstrates the relationship between social vulnerability and the disease. These findings highlight the need for specific public policies focused on active surveillance, early diagnosis, continuous treatment, and structural improvements in prison facilities to ensure better health conditions for this population.

31. EPIDEMIOLOGICAL ANALYSIS OF EARLY MORTALITY FROM CERVICAL CANCER IN MARANHÃO FROM 2020 TO 2023

Darlem Sousa Braga¹, Dwight Daniel Tomlinson¹, Lailane Mayara Chaves Fernandes¹, Nadylla Glenda Gomes Araujo¹, Quiza Solene Monteiro de Brito¹, Wilker Franklyn Silva Mendonça¹ and Alcione Miranda dos Santos¹

¹ Federal University of Maranhão.

INTRODUCTION: Cervical cancer is a public health problem in Brazil, especially in Maranhão (MA). The state has been experiencing high morbidity and mortality rates from cervical cancer, according to the

National Cancer Institute (INCA), which estimated approximately 800 cases in 2023 alone, considering deaths in women aged 30-69 years as premature deaths. The scarcity of studies between 2020 and 2023 supports the need for further studies on early mortality from cervical cancer. **OBJECTIVES:** This study aims to analyze data on early mortality from cervical cancer in Maranhão, from 2020 to 2023, in order to support actions and public policies aimed at improving women's health indicators. **METHODOLOGY:** This is an ecological and retrospective study that analyzed early deaths from cervical cancer in Maranhão, between 2020 and 2023, among women aged 30 to 69. Secondary public data from the Mortality Information System (Mortality Information System - Department of Information and Informatics of the Unified Health System) and the Brazilian Institute of Geography and Statistics were used. The following variables were considered: year, age group, education level, and race/color. Statistical analysis was performed in RStudio software, using Pearson's chi-square test to verify associations between deaths, race/color, and education level. The results are presented in absolute and relative frequencies, using graphs that highlight trends and proportional distributions. Because these are public data, no ethical approval was required. **RESULTS:** During the study period, a population of 1,562,000 inhabitants was observed in the city of São Luís, and among these, 899 early deaths from cervical cancer were recorded. The age group with the highest death rate was between 45 and 64 years old, and the year with the highest mortality rate was 2021, at 15.17%. Sixty-five percent of early deaths were among brown women, and women with low levels of education; up to seven years of schooling; are the most affected by early mortality. Statistical analyses found no association between early mortality, ethnicity, and education in São Luís during the analyzed period. **CONCLUSION:** Therefore, gaps in tracking cervical cancer mortality persist. Given the above, prevention measures, expanded access to vaccination, routine screenings, and oncological care are necessary.

32. PERCEPTION OF CHANGES IN THE PHASES OF THE MENSTRUAL CYCLE BY WOMEN WHO EXERCISE

Ana Clara Canuto Tanios¹, Karollyne Silva Andrade¹ and Débora Luana Ribeiro Pessoa¹

¹ Federal University of Maranhão

INTRODUCTION: Women's health requires comprehensive care at all stages of life to ensure their well-being. In this context, adherence to physical exercise (PE) has increased, reflecting the value placed on healthy habits. However, the menstrual cycle (MC) is a physiological process characterized by hormonal fluctuations that can interfere with PE practice, influencing women's perception of performance and disposition. **OBJECTIVE:** Given this, the objective of this study was to analyze the perception of women who practice physical exercise in relation to changes in the different phases of the MC. **METHODS:** This is an observational cross-sectional study using an original questionnaire consisting of 10 questions based on recurring themes in the literature, later disseminated on social networks and messaging applications. The questionnaire was administered in July 2025 using the Google Forms platform. The inclusion criteria were: women of childbearing age who practice PE. The sampling was non-probabilistic, for convenience, with a median age of 23 years. Fifty-two women participated, of whom 49 were included after analysis and application of the criteria. All participants formally consented through the Free and Informed Consent Form. **RESULTS:** Most participants (79.5%, n=39) demonstrated knowledge of the duration of the menstrual cycle (21-35 days), and 75.5% (n=37) identified their phase.

A significant majority (95.9%, n=47) noticed variations in physical exercise related to the cycle. The follicular phase was associated with greater energy (73.5%, n=36), while the menstrual period was associated with less energy (77.6%, n=38), reflecting hormonal variations. Lack of motivation was the most prevalent symptom (38 participants), impacting the reduction of PE for 51% of respondents. These findings reflect the hormonal variations typical of the MC, especially estrogen and progesterone levels. **CONCLUSION:** These results indicate that hormonal fluctuations in the MC influence women's perception and willingness to exercise, reinforcing the importance of considering the cycle when planning training for comprehensive women's health care.

33. NEUROINFLAMMATION AS A THERAPEUTIC TARGET IN NEURODEGENERATIVE DISEASES

Daniel de França Alves¹, Nicollas Barroso de Oliveira Pereira¹, João Marco Miranda Nogueira de Oliveira¹, João Marcos Wernz¹ and José Alberto Pereira Pires¹.

¹ Federal University of Maranhão

INTRODUCTION: Neuroinflammation is an inflammatory response of the central nervous system, involving the activation of glial cells and the release of inflammatory mediators. It plays a crucial role in neurodegenerative diseases such as Alzheimer's and Parkinson's, contributing to neuronal degeneration. Understanding its mechanisms is essential for the development of new therapeutic strategies and for providing hope to patients. **OBJECTIVE:** To explore neuroinflammation as a therapeutic target in neurodegenerative diseases, highlighting approaches and challenges, and emphasising its potential based on clinical and preclinical evidence. **METHODS:** The methodology of this summary consists of an integrative literature review on neuroinflammation in neurodegenerative diseases. The databases PubMed, Scopus, and Web of Science were used. A total of 15 articles were identified and distributed as follows: 6 relevant articles were found in PubMed, 5 in Scopus, and 4 in Web of Science. The selection included studies published over the past ten years, prioritising articles that addressed therapeutic interventions and the mechanisms of neuroinflammation in both clinical and preclinical contexts. **RESULTS:** The results of the integrative review highlight the complexity of neuroinflammation and its significance in neurodegenerative diseases. The activation of glial cells, such as microglia and astrocytes, is central to this process, exacerbated by oxidative stress and the accumulation of abnormal proteins. This inflammatory response is observed in Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis. Therapeutic approaches, including anti-inflammatory drugs and non-pharmacological interventions, have shown efficacy in preclinical models, with reductions in inflammation and functional improvements. Promising results from clinical trials suggest that modulating neuroinflammation may represent a viable strategy for treating these diseases, underscoring the need to further understand its underlying mechanisms. **CONCLUSION:** Neuroinflammation is central to neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis, contributing to neuronal degeneration. Therapeutic approaches, including anti-inflammatory drugs and non-pharmacological interventions, show potential to mitigate this inflammation. Recent studies suggest that modulating neuroinflammation may improve patients' quality of life.

34. ACUTE STRESS AND VENTRICULAR DYSFUNCTION: AN INTEGRATIVE REVIEW ON TAKOTSUBO SYNDROMEThais Klerine Muniz Sousa¹, Amanda Cristina Moura Brandão¹ and Gabriela Dantas Carvalho¹.¹ Federal University of Maranhão

INTRODUCTION: Stress Cardiomyopathy, also known as Takotsubo Syndrome (TTS), is a transient cardiac condition characterized by apical dysfunction of the left ventricle and is associated with emotional or physical stress, giving rise to the expression "Broken Heart Syndrome". **OBJECTIVE:** The aim of this study is to investigate acute psychological stress as a triggering factor of Takotsubo Syndrome and its clinical manifestation. **METHODS:** This study is an integrative review (PRISMA), using the descriptors "Takotsubo Syndrome," "psychological stress," and "cardiomyopathy" in the PubMed and SciELO databases. National and international clinical studies published between 2020 and 2025, in English and Portuguese, addressing Takotsubo Syndrome in adult patients of both sexes were included. Duplicate papers, studies involving animal models, dissertations, and theses were excluded. Data were organized in an Excel spreadsheet and presented in tables. **RESULTS:** A total of 362 studies were initially identified, of which only 10 met the eligibility criteria and were included in this integrative review. Takotsubo Syndrome (TTS) primarily affects postmenopausal women, with ventricular function typically recovering within a few weeks. Among men, cases are less frequent and usually occur between 64 and 81 years of age, often presenting as a pre-syndromic condition. Acute psychological stress triggers autonomic hyperactivity and excessive catecholamine release, leading to transient ventricular dysfunction that is frequently indistinguishable from acute myocardial infarction in its early phase. Diagnosis is established through electrocardiographic ST-T wave abnormalities, cardiac magnetic resonance imaging, and clinical criteria such as those defined by the Mayo Clinic. Management involves close monitoring and the administration of beta-blockers. The main reported complications include arrhythmias, thromboembolic events, and heart failure. **CONCLUSION:** Takotsubo Syndrome (TTS) highlights the strong relationship between emotional factors and the development of non-obstructive cardiovascular alterations. Its connection with the emotional component underscores the importance of comprehensive care, including physical, pharmacological, and psychosocial approaches.

35. DISPARITIES IN HOSPITAL ADMISSIONS FOR PRIMARY HYPERTENSION BETWEEN IMPERATRIZ AND SÃO LUÍS (2015–2025)Lara Vitória Araújo de Oliveira¹, Júlia Marreiros Silva¹, Gabriel Alves Lima², Laura Batista Cruz¹, Cecília Giovanna dos Santos Sarmiento¹, and Luciana Oliveira dos Santos¹¹ State University of the Tocantina Region of Maranhão² Federal University of Lavras

INTRODUCTION: Primary hypertension is a chronic multifactorial condition characterized by persistent elevation of blood pressure without an identifiable secondary cause, and is one of the main cardiovascular risk factors in Brazil. In situations of clinical decompensation, it can result in hospital admissions, especially in contexts of fragile primary care. **OBJECTIVE:** This study aimed to compare the hospitalization rate for primary hypertension in the cities of Imperatriz and São Luís, in Maranhão, between 2015 and 2025. **METHODS:** This is an epidemiological, descriptive, quantitative study based on public secondary data obtained from the Hospital Information System (SIH/SUS) through TABNET/DATASUS. Filters

were used for age group, sex, race/color, and mortality, considering the ICD-10 category "I9 – Diseases of the Circulatory System".

RESULTS: During this period, 319 hospitalizations were recorded in Imperatriz and 1,017 in São Luís. The adjusted rate per 100,000 inhabitants was higher in Imperatriz (122.8) than in São Luís (98), which shows a greater proportional impact of hypertension in the city with the smaller population. The most affected age group was the elderly (60+), representing 58% of hospitalizations in Imperatriz and 49% in São Luís. The prevalence was higher among women (58%) in both cities. Regarding race/color, there was a predominance of brown race in São Luís (47.68%), and a high percentage of records without information in Imperatriz (47.02%), which limits part of the analysis. Sixteen deaths were reported in Imperatriz (5%) and 32 in São Luís (3%). **CONCLUSION:** It can be concluded that the city of Imperatriz presents greater vulnerability proportional to the complications of hypertension, which may reflect limitations in access, coverage, or effectiveness of local primary care. The data reinforce the importance of health surveillance and strengthening primary care as a central strategy for reducing avoidable hospitalizations due to sensitive conditions.

36. DIFFICULTIES IN GYNECOLOGICAL CARE FOR LESBIAN WOMEN IN THE UNIFIED HEALTH SYSTEM: INTEGRATIVE REVIEWMaria Izabel dos Santos Souza¹ and Erika Chirley Chaib Araújo¹.¹Institute of Medical Education

INTRODUCTION: Gynecological care provided to cisgender lesbian women in the Unified Health System (SUS) is often limited by structural, symbolic, and relational barriers that compromise equity and comprehensive care. Although there are guidelines and public policies focused on sexual diversity in Brazil, reproductive and sexual health care remains permeated by stigma, heteronormativity, and invisibility. These factors contribute to the neglect of preventive exams, such as the Pap smear, and to the silencing of sexual orientation during care, motivated by fear of judgment and discrimination. Poor training of professionals, the lack of specific protocols, and the hostile clinical environment are aspects that exacerbate this exclusion. **OBJECTIVE:** This study aimed to gather and critically analyze recent scientific production on the barriers faced by lesbian women in accessing gynecological care provided by the SUS, considering the effects of institutional discrimination on reception and quality of care. **METHODS:** This is an integrative literature review, with searches conducted in PubMed, SciELO, LILACS, and Google Scholar. The following DeCS and MeSH descriptors were used: "lesbian women," "gynecological care," "access barriers," "Unified Health System," and "discrimination," combined using Boolean operators. Articles published between 2020 and 2025, in Portuguese, English, and Spanish, that directly or indirectly addressed barriers to gynecological care for this population within the SUS (Brazilian Unified Health System) were included. **RESULTS:** The studies analyzed indicate that lesbian women face multiple obstacles, such as professionals assuming they are heterosexual, omitting their sexual orientation during consultations, insecurity during care, and gaps in professional training on the health of the LGBTQIA+ population. These barriers result in low adherence to preventive exams, delayed diagnosis of pathologies, and a feeling of not belonging in public health services. **CONCLUSION:** Overcoming the barriers faced by lesbian women in gynecological care within the Unified Health System (SUS) requires structural and cultural changes that promote

care based on human rights and social justice. Healthcare professionals must adopt a welcoming approach, free from heteronormative assumptions, using active listening and inclusive language to ensure the safety and trust of patients. Continuing education in LGBTQIA+ health and the implementation of specific protocols are essential to combat stigma and ensure comprehensive care. More than a technical issue, this transformation represents an ethical commitment to the principles of the Unified Health System (SUS) - universality, equity, and comprehensiveness, reaffirming dignified access to healthcare as an essential human right.

37. HOSPITALIZATIONS DUE TO ACUTE PHARYNGITIS AND/OR TONSILLITIS IN CHILDREN IN MARANHÃO, BRAZIL, BETWEEN 2016 AND 2024

Luca Ribeiro Santos Araújo¹, Judith Carneiro Maciel¹ and Wellyson da Cunha Araújo Firmo¹

¹ State University of Maranhão Tocantine Region

INTRODUCTION: Acute pharyngitis and tonsillitis are upper respiratory tract infections caused by viral or bacterial agents, leading to throat inflammation and pain. Pharyngitis affects the pharyngeal mucosa, while tonsillitis involves the palatine tonsils. These conditions primarily affect children and are common causes of medical visits and excessive antibiotic use. Climate, school gatherings, and immature immunity increase children's vulnerability. In Maranhão, regional inequalities and limited access to healthcare make it essential to understand the epidemiological profile of these infections to guide prevention and management strategies. **OBJECTIVE:** To analyze hospitalizations due to acute pharyngitis and tonsillitis in children in the state of Maranhão. **METHODS:** This is a retrospective, quantitative epidemiological study based on secondary data from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS), accessed via the TABNET platform of the Department of Informatics of SUS (DATASUS). Hospitalizations for acute pharyngitis and/or tonsillitis in children aged 0–9 years in Maranhão from 2016 to 2024 were analyzed. Variables included the number of hospitalizations, municipality, sex, race/color, type of care (emergency or elective), and month of occurrence. **RESULTS:** Between 2016 and 2024, 6,306 hospitalizations due to acute pharyngitis and/or tonsillitis were recorded in children aged 0–9 years in Maranhão. The majority occurred in the municipalities of Bacabal (487), Governador Nunes Freire (370), and Passagem Franca (269), surpassing even the capital, São Luís (119). Of the total, 5,942 hospitalizations were emergencies, and 364 were elective. The age group 1–4 years accounted for the highest number of hospitalizations (3,700). Regarding race/color, most children were recorded as mixed race (pardo) (4,206), reflecting local demographics. Sex distribution was balanced, with 3,310 males and 2,996 females. A monthly average of 59 hospitalizations was observed between January and May, coinciding with the beginning of the school year and higher rainfall, while the remaining months showed an average of 57.85 hospitalizations. **CONCLUSION:** Hospitalizations due to acute pharyngitis and/or tonsillitis in children in Maranhão were most frequent in the 1–4-year age group and predominantly occurred in interior municipalities. The slight monthly variation indicates continuous infections, requiring year-round surveillance and prevention. These data highlight the need to strengthen primary healthcare, focusing on the most vulnerable regions, aiming to reduce complications and avoidable hospitalizations.

38. FACTORS ASSOCIATED WITH SLEEP QUALITY IN CHRONIC RENAL PATIENTS ATTENDED IN A NEPHROLOGY OUTPATIENT MODEL

Wesleyanne Soares Santana¹, Erika Cristina Ribeiro de Lima Carneiro¹, Mônica Cavalcante Santana¹, and Priscylla Veira Vezzosi¹

¹ Federal University of Maranhão

INTRODUCTION: Sleep patterns are an important marker of health and well-being, especially when it comes to patients with chronic kidney disease. Individuals with Chronic Kidney Disease (CKD), even in non-dialysis stages, often experience sleep disturbances that negatively affect their quality of life. In this regard, the Pittsburgh Sleep Quality Index (PSQI) helps assess different aspects of sleep. Furthermore, the 36-Item Short Form (SF-36) is a questionnaire used to evaluate quality of life. **OBJECTIVE:** This study aimed to analyze factors associated with sleep quality in patients with CKD attended in a nephrology outpatient clinic. **METHODS:** The study's methodology involved the application of the "Pittsburgh Sleep Quality Index" (PSQI) and SF-36 questionnaires to patients seen at a nephrology outpatient clinic. The instrument is part of the research "Analysis of Biopsychosocial Aspects in Interdisciplinary Care in a Model Nephrology Outpatient Clinic," registered under the approval of the Ethics Committee 7.195.964. This summary included the analysis of 35 patients in CKD stages 3 and 5. **RESULTS:** About 28.5% of the patients analyzed had good sleep quality (<5), with a mean age of 64.9±12.2 years, estimated glomerular filtration rate (eGFR) of 33.4±15.6 mL/min, body mass index of 27.3±4.4 kg/m², systolic blood pressure of 129.6±18.1 mmHg, and diastolic blood pressure of 74.6±15.5 mmHg. Sleep quality was correlated with general health ($r=-0.47$, $p=0.004$) and with the mental health component ($r=-0.36$, $p=0.003$) of the SF36 questionnaire, and relationships were established with age ($r=-0.34$, $p=0.03$) and eGFR ($r=-0.035$, $p=0.040$). No association was found with anemia, metabolic disorders, calcium, phosphorus, dyslipidemia, or blood pressure. **CONCLUSION:** In the study, it was found that in this sample of chronic kidney patients, sleep quality was affected by worse kidney function in older individuals and those with more compromised overall health, specifically in the aspect of mental health.

39. EARLY SCREENING OF AUTISM SPECTRUM DISORDER BY CHILD DEVELOPMENT MILESTONES: A CLINICAL REVIEW

Aissa Borges Vale Dames¹, Arthur Almeida Barros¹, Nicole Neewler Loiola Duarte¹, Juliana Miranda Lago¹, Maria Eduarda Couto Noronha¹, and Rodrigo Servinhago¹

¹ Don Bosco University Center

INTRODUCTION: Child development is a continuous and multifactorial process involving motor, cognitive, linguistic, and socio-emotional acquisitions. Monitoring the expected milestones for each age group is an essential strategy for the early detection of neurodevelopmental disorders, such as Autism Spectrum Disorder (ASD), characterized by deficits in communication, social interaction, and repetitive behavior patterns. Timely recognition of these signs, even in early childhood, favors early interventions during the period of greatest brain plasticity, reducing future functional impacts. **OBJECTIVE:** To examine, through an integrative literature review, how the systematic assessment of child developmental milestones can be used as a clinical tool in the early screening of Autism Spectrum Disorder (ASD), highlighting its relevance for identifying atypical signs, timely diagnostic referral, and the development of individualized intervention strategies. **METHODS:** This is an

integrative review with a qualitative approach, conducted using the SciELO, PubMed, LILACS, and Google Scholar databases. The descriptors "child development", "developmental delay", and "autism spectrum disorder" were used, combined with the Boolean operators "AND" and "OR", in Portuguese and English. Original articles, systematic reviews, and observational studies with children aged 0 to 5 years, published between 2015 and 2025, were included. After applying the eligibility criteria, 13 studies were selected and critically analyzed regarding their objectives, methodology, and clinical findings. **RESULTS:** The analysis revealed an association between delays in milestones such as babbling, shared attention, eye contact, name response, and pretend play with early signs of ASD (Autism Spectrum Disorder). It was evident that children who do not achieve these skills within the expected ages have a higher risk of atypical neurodevelopment. Early interventions, especially up to 36 months, showed positive impacts on cognition, language, and socialization, being most effective when applied by multidisciplinary teams. **CONCLUSION:** Developmental milestones are fundamental clinical tools for screening for ASD (Autism Spectrum Disorder). Their use requires trained professionals, standardized protocols, and public policies that enable early diagnosis, qualified referrals, and interventions that promote child development

40. BREASTFEEDING AS A POTENTIAL PREVENTIVE FACTOR AGAINST BREAST CANCER

Gabriella de Jesus Machado Santos¹, Ana Luiza Sousa Ricci¹, Daniela Rodrigues de Sá¹, Erik Lucas Silva de Sousa¹, and Raquel Vilanova Araújo¹

¹ State University of Maranhão Tocantine Region

INTRODUCTION: Breast cancer is a neoplasm and one of the leading causes of death among women worldwide. Risk factors include genetic, environmental, reproductive, and behavioral aspects. In this context, breastfeeding acts as a protective factor by reducing hormonal exposure, promoting epigenetic and immunological changes, and eliminating damaged mammary cells. Beyond its health benefits, it also contributes to lowering the economic burden of cancer treatment. However, despite its protective effects, certain subgroups face challenges in adopting the practice due to social and physiological factors. **OBJECTIVE:** To analyze the relationship between breastfeeding and breast cancer prevention. **METHODS:** This is an integrative review conducted according to the PRISMA guidelines. The search was performed in July 2025 in the PubMed and BVS databases, using controlled descriptors and Boolean operators. Studies published between 2020 and 2025, in Portuguese, English, and Spanish, with free full-text access, were included. After screening, studies addressing the protective mechanisms of breastfeeding against breast cancer and related genetic and social factors were selected. **RESULTS:** The reviewed studies demonstrate that breastfeeding is associated with a reduced risk of breast cancer, particularly in aggressive subtypes such as triple-negative breast cancer. Epigenetic, hormonal, and immunological mechanisms appear to mediate this protection by promoting cellular differentiation and reducing estrogen exposure. Moreover, factors such as breastfeeding duration and parity correlate with a lower likelihood of developing the disease, especially among women with a family history or predisposed conditions. Mammary adiposity also proved influential in this context, being affected by hormonal changes during lactation. Additionally, racial and socioeconomic factors influence both access to breastfeeding and vulnerability to certain tumor subtypes. **CONCLUSION:** The promotion of breastfeeding emerges as an oncological prevention strategy with significant public health impact, capable of enhancing health education while reducing inequalities and healthcare costs related to breast cancer. Therefore,

public policies supporting breastfeeding — particularly among vulnerable populations — are essential to expanding its protective effects on a large scale.

41. EFFICACY OF THE LUCAS DEVICE COMPARED TO MANUAL CARDIOPULMONARY RESUSCITATION IN CARDIAC ARREST: A SYSTEMATIC REVIEW

João Victor Cunha Silva¹, Maria Beatriz Soares Vieira, João Pedro Belaglovis Castelo Branco¹, Isabela Marinho da Cunha¹, Jorge Fernando Lopes da Cunha¹, Davi Nunes Marques¹, and Santiago Cirilo Nogueira Servin¹

¹ Federal University of Maranhão

INTRODUCTION: Cardiorespiratory arrest (CRA) is the absence of cardiac activity, characterized by a lack of circulation. CRA is the final common pathway for various clinical or traumatic conditions. Reversing CRA and the post-event prognosis depend on the identification and implementation of high-efficacy cardiopulmonary resuscitation (CPR) measures. In this context, the Lund University Cardiopulmonary Assist System (LUCAS) is an automated chest compression device that delivers effective and continuous compressions during CRA. **OBJECTIVE:** To compare the efficacy of the LUCAS device with manual CPR. **METHODS:** This is a systematic review conducted according to the PRISMA protocol, based on the guiding question: "What is the impact of the LUCAS device, compared to manual compression, on the efficacy of CPR?" A search was performed in the PubMed, Virtual Health Library (VHL), and Cochrane databases, using the descriptors "Cardiopulmonary resuscitation," "Mechanical chest compression," "LUCAS," and the Boolean operator "AND," with no language restrictions, resulting in 48 studies published in the last five years. Subsequently, the studies were reviewed and analyzed for this review. **RESULTS:** In total, 48 articles were found, of which 10 were selected for addressing the review's guiding question. Of these, 8 consisted of samples with out-of-hospital CRA. Regarding CPR efficiency, 3 articles demonstrated the superiority of LUCAS over manual CPR: greater achieved depth, better compression rate per minute, and increased hands-off time (continuous compression time). In the other 7 studies, LUCAS was not inferior to manual CPR. Furthermore, 4 articles indicated a benefit in using mechanical CPR in specific contexts, such as in mountainous terrain, difficult pre-hospital transports, and during prolonged CPR, achieving higher levels of efficacy. However, 4 studies reported that LUCAS prolonged the total CPR and scene extraction time and resulted in significant pauses (longer than 30 seconds) for its deployment. No review presented statistically significant data regarding return of spontaneous circulation, mortality rate, or complications when comparing mechanical CPR to manual CPR. **CONCLUSIONS:** Although it does not change the outcome, the LUCAS device is effective and holds value in specific contexts, particularly in difficult pre-hospital settings. Nevertheless, further studies are necessary to elucidate the influence of deployment pauses and prolonged CPR and scene extraction on patient prognosis.

42. EVALUATION OF POINT-OF-CARE ULTRASOUND IN THE RAPID AND EFFICIENT DIAGNOSIS OF ACUTE ABDOMEN: A SYSTEMATIC REVIEW

Yasmin Rodrigues Vieira Araujo¹, Ana Clara Porto de Sa Ferreira¹, Pamela Carolinny Coelho da Silva Costa¹, Paula Renata Rodrigues Ortega Mello¹, Ana Júlia Silva Correia¹ and Suzane Katy Rocha Oliveira¹.

¹ CEUMA UNIVERSITY

INTRODUCTION: Acute abdomen is one of the main clinical emergencies in emergency services, characterized by sudden or intense abdominal pain and the potential risk of rapid deterioration of the clinical condition. The diversity of differential diagnoses, the

variability of manifestations, and the limitations of the physical examination require agile and reliable complementary methods. Point-of-care ultrasound (POCUS), performed at the bedside by the attending physician, emerges as an innovative diagnostic tool, capable of providing real-time information, without radiation, at low cost, and applicable in multiple healthcare settings. **OBJECTIVE:** To evaluate, through a systematic review, the diagnostic accuracy, clinical applicability, and limitations of using POCUS in the management of acute abdominal pain in emergency departments. **METHODS:** The search was conducted in the PubMed and SciELO databases, covering publications between 2018 and 2025, in Portuguese and English. Complete studies that compared POCUS to traditional imaging methods, such as computed tomography and radiography, were included, considering sensitivity, specificity, time to diagnosis, and impact on therapeutic management. After applying inclusion and exclusion criteria, 12 articles comprised the final sample, encompassing different populations and clinical contexts. **RESULTS:** POCUS has demonstrated high performance in the diagnosis of appendicitis (sensitivity 81%-87%), ileocolic intussusception (94.9%-99.1%), and abdominal aortic aneurysm (up to 99%), as well as conditions such as diverticulitis, pneumoperitoneum, mesenteric ischemia, and aortic occlusion. Its use has reduced the time to diagnosis, the need for complementary examinations, and hospital stay, optimizing clinical decision-making. Its pediatric use was highlighted, avoiding unnecessary radiation exposure in cases of appendicitis and intussusception. However, its effectiveness proved to be dependent on operator experience, with significant variations among less trained professionals. Gaps remain in the literature regarding economic impact and long-term clinical outcomes, suggesting the need for further studies that standardize protocols and expand the evidence base. **CONCLUSION:** POCUS is a promising tool in the evaluation of acute abdominal pain, facilitating faster, more accurate, and cost-effective decisions. Its widespread implementation requires adequate training, well-structured guidelines, and robust research to consolidate its role as an essential resource in emergency medicine.

43. SAFETY AND ADVERSE EFFECTS OF CAR T-CELL THERAPY IN THE TREATMENT OF GASTRIC CANCER

Leandro Moreno da Cruz¹, Jilmário Gomes de Santana Júnior¹, Patrik Lorrán Moraes de Sousa¹, Ana Beatriz Martins Rosa¹, and Francisca Luzia Soares Macieira de Araújo¹.

¹ Federal University of Maranhão

INTRODUCTION: Chimeric Antigen Receptor T-cell (CAR-T) therapy demonstrates a promising approach in the treatment of solid tumors, particularly gastric cancer, especially for CLDN18.2-positive tumors. Safety assessment and the management of adverse effects are crucial for optimizing clinical outcomes and the safety profile. **OBJECTIVE:** The objective of this study is to analyze the current perspectives on the use of CAR T-cell therapy in the treatment of gastric cancer (GC), considering its safety profile and adverse effects. **METHODS:** This is a systematic review that included studies containing "chimeric antigen receptor" or "CAR T" and "gastric cancer" or "gastroesophageal junction cancer" and "safety" or "adverse effects" in the title or abstract in the Pubmed, Scopus, and Embase databases. The search focused on clinical trials from the last 5 years, accessed in July 2025. A total of 46 articles were found, of which 4 were selected according to the inclusion criteria: studies available in full text in English or Portuguese, controlled and randomized clinical trials verified by title and abstract by 2 independent reviewers. **RESULTS:** CAR-T therapy in the treatment of GC is associated with a profile of

adverse effects, with hematological toxicities being the most prominent. In a Phase 1 study, all 37 patients experienced Grade 3 or higher hematological toxicities, including leukopenia (83.8%), neutropenia (67.6%), anemia (40.5%), and thrombocytopenia (16.2%). Similarly, in a Phase 2 study, 99% of patients in the group experienced adverse events, with reductions in lymphocyte count (98%), white blood cells (77%), and neutrophils (66%). Cytokine Release Syndrome (CRS) is also a frequent adverse effect, occurring in about 95% in both. Gastrointestinal adverse events, such as Grade 4 GI hemorrhage and gastric mucosal lesions, were also observed, albeit on a smaller scale. It is important to note that no severe neurotoxicities or Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS) were observed. **CONCLUSION:** CAR-T for GC, although associated with a profile of adverse effects characterized by relevant hematological toxicities and frequent occurrence of low-grade CRS, presents a promising safety profile, considering the absence of severe toxicities or ICANS across all studies.

44. THE RELATIONSHIP BETWEEN PSYCHEDELIC MICRODOSING AND IMPROVEMENT IN ANXIETY SYMPTOMS: AN INTEGRATIVE LITERATURE REVIEW

Joao Pedro Belaglovis Castelo Branco¹, Mateus Ayrton Barboza de Melo¹, Nathálya Melissa Melo Lemos² and Caio José Carvalho Filho¹.

¹ Federal University of Maranhão

² IDEA Medical School

INTRODUCTION: Psychedelic microdosing, the regular ingestion of sub-hallucinogenic doses of compounds such as lysergic acid diethylamide (LSD) and psilocybin, is analyzed as a strategy to alleviate anxiety symptoms, such as excessive worry, tension, or restlessness. Reports suggest mood improvements, but the scientific basis supporting these benefits is scarce and marked by methodological limitations. **OBJECTIVE:** This work aims to critically analyze the available evidence from clinical and observational studies regarding the relationship between psychedelic microdosing and improvement in anxiety symptoms, identifying reported effects, usage patterns, associated risks, and research gaps. **METHODS:** An integrative literature review was conducted in the PubMed database, using Boolean operators to combine descriptors related to psychedelic microdosing (such as "psychedelic" and "microdose") and anxiety (such as "anxiety disorders"[MeSH]). The initial search returned 47 articles; after excluding animal studies, non-open access articles, or those without direct relevance, 9 publications were selected for qualitative analysis, including randomized clinical trials and observational studies. **RESULTS:** In observational studies with thousands of users, between 59% and 72% reported improvement in anxiety symptoms after practicing psychedelic microdosing, with anxiety being one of the most common motivations for starting the practice. However, such data are based predominantly on online self-reports, without placebo control. On the other hand, clinical trials with doses of 10 to 20µg of LSD showed positive acute effects on mood and energy, but also reported adverse effects, such as transient anxiety. A double-blind study with psilocybin found no significant differences in anxiety symptoms compared to placebo. Another investigation using a self-assessment protocol with a placebo also failed to identify benefits superior to placebo after 5 weeks, suggesting a relevant role of expectations. In a survey on perceived effectiveness, 72% of participants with a previous anxiety diagnosis considered microdosing effective, exceeding the 56% rate attributed to conventional treatments. **CONCLUSION:** Although observational findings indicate microdosing as beneficial according to users, studies

with greater methodological control do not, to date, support robust clinical efficacy in reducing anxiety symptoms. Gaps persist, such as the absence of trials with active placebos, diverse samples, and longitudinal follow-up.

45. COMORBIDITIES ASSOCIATED WITH AUTISM SPECTRUM DISORDER (ASD) IN CHILDREN AND ADOLESCENTS: AN INTEGRATIVE REVIEW

Emília Noronha Oliveira¹, Amiel Alencar Ferreira do Nascimento¹, Maria Regina de Melo Andrade¹, Sarah Rachel Queiroz Paixão Machado¹ and Euler Nicolau Savaia Filho¹.

¹ State University of Maranhão.

INTRODUCTION: Autism Spectrum Disorder (ASD) presents heterogeneous clinical manifestations and is frequently associated with comorbidities such as sleep disturbances, eating disorders, and somatic symptoms, particularly during childhood. **OBJECTIVE:** To identify and synthesize the main comorbidities and associated conditions of ASD in children and adolescents based on a review of recent scientific literature, considering the multifactorial nature of ASD and its overlap with other conditions. **METHODS:** This study is an integrative literature review aimed at identifying and summarizing the principal comorbidities associated with Autism Spectrum Disorder (ASD) in children and adolescents, based on articles published between 2020 and 2026 in Portuguese, English, or Spanish. The search was conducted in the PubMed database using controlled descriptors combined with Boolean operators. Studies that did not focus primarily on comorbidities, as well as case reports, letters to the editor, theses, and dissertations, were excluded. The selection process consisted of two stages: screening of titles and abstracts, followed by full-text reading. Data extracted from the included studies were organized in tables and analyzed descriptively. **RESULTS:** Attention-Deficit/Hyperactivity Disorder (ADHD) (30–50%), epilepsy (14.2%), macrocephaly (up to 4.48 OR), hydrocephalus (1.1%), cerebral palsy (3%), migraine (10.3%), congenital anomalies (3.8%), catatonia (10.4%), Functional Neurological Disorders (FND) (10%), anxiety disorders (35%), mood disorders (19%), depression (18%), behavioral and somatic disorders (28%), Obsessive-Compulsive Disorder (OCD) (9%), bipolar disorder (7%), developmental delay (14.9%), sleep disturbances (50–80%), and Avoidant/Restrictive Food Intake Disorder (ARFID) (11.4%). **CONCLUSION:** ASD rarely occurs in isolation and is commonly associated with comorbidities involving neurodevelopmental disorders, psychiatric conditions, and clinical issues such as ADHD, epilepsy, anxiety disorders, sleep disturbances, and ARFID. These associations complicate both diagnosis and management, highlighting the need for multidisciplinary and individualized approaches that emphasize comprehensive care and account for the clinical complexity of these cases. Early detection and personalized care are essential to improve prognosis and promote more effective interventions that integrate family, educational, and healthcare contexts.

46. SYSTEMATIC REVIEW OF THE RELATIONSHIP BETWEEN SELF-INJURY AND SUICIDE RISK IN BORDERLINE PERSONALITY DISORDER

Nathália Melissa Melo Lemos¹, João Pedro Belaglovis Castelo Branco², Jorge Antônio Meireles Teixeira¹.

¹ IDEA Medical School

² Federal University of Maranhão

INTRODUCTION: Non-suicidal self-injury (NSSI), defined as self-harming behavior without lethal intent, is highly prevalent in

Borderline Personality Disorder (BPD), which is characterized by emotional instability and impulsivity. NSSI is an important clinical marker of suicide risk, as patients with BPD show high rates of suicide attempts and deaths, and this behavior is part of the diagnostic criteria for the disorder. Nevertheless, there are still gaps regarding the relationship between NSSI and suicide risk, as well as the psychological factors that intensify this association. **OBJECTIVE:** To systematically review recent literature on the relationship between NSSI and suicide risk in individuals with BPD, describing data on prevalence, statistical correlations, and the psychological mechanisms involved, such as impulsivity, pain desensitization, and emotional dysregulation. **METHODS:** A systematic search was conducted in the PubMed database using the descriptors "Borderline Personality Disorder", "self-harm", "non-suicidal self-injury", and "suicide risk", combined with the Boolean operators "AND" and "OR". Clinical, observational, and systematic review studies published between 2020 and 2025 were included, provided they were peer-reviewed. Studies involving adolescent samples and those without a direct focus on this association were excluded. **RESULTS:** Findings indicated a prevalence of NSSI between 60% and 90% among patients with BPD, while suicide attempts were reported in 70% to 80% of cases. Longitudinal studies suggest that although the frequency of NSSI may decrease over time, about one-third of patients maintain these behaviors after five years, continuing to present a high suicide risk. The association between NSSI and suicide attempts proved consistent: individuals who engage in self-injury show a higher likelihood of multiple, more severe, and recurrent attempts. Factors such as impulsivity, a previous history of suicide attempts, and difficulties in emotional regulation increase the risk of progression from NSSI to suicidal acts. Interventions focused on emotional regulation, such as Dialectical Behavior Therapy (DBT), have shown effectiveness in reducing NSSI and, consequently, suicide risk. **CONCLUSION:** Although studies reinforce NSSI as a strong predictor of suicide attempts in BPD, there remains a need to incorporate its systematic assessment into clinical practice for early detection and prevention of severe outcomes. Therapeutic strategies focused on emotional regulation and impulsivity management are essential to reducing suicide risk in this population.

47. EFFECTS OF IMPLEMENTING THE FAST-HUG CHECKLIST IN INTENSIVE CARE AND EMERGENCY UNITS: AN INTEGRATIVE REVIEW

Yasmin Rodrigues Vieira Araujo¹, Pamela Carolinny Coelho Da Silva Costa¹, Milena Sousa Campos¹, Mávilla Maria Eloi Melo, Hândrya Karla Martins Gomes² and Yvila Coêlho De Sousa³.

¹ Ceuma University

² Federal University Of Maranhão

³ Independent Medical Researcher

INTRODUCTION: The increasing complexity of critical patient care poses challenges to the safety, effectiveness, and standardization of clinical practices. In this scenario, the FAST-HUG protocol (Feeding, Analgesia, Sedation, Thromboembolism prophylaxis, Head-of-bed elevation, Ulcer prophylaxis, Glucose control) has emerged as a low-cost tool aimed at systematizing essential interventions in ICUs. Originally proposed for the intensive care setting, its adoption in emergency services aims to optimize care through safe, efficient, and accessible routines. **OBJECTIVE:** To analyze the effects of implementing the FAST-HUG checklist in intensive care units and emergency services, focusing on patient safety, prevention of

complications, and rationalization of clinical practice. **METHODS:** An integrative literature review was conducted, with searches in the PubMed, SciELO, BVS, and Google Scholar databases. The descriptors used were: "fast hug", "intensive care units", and "hospital emergency", connected by the Boolean operator "AND". Ten articles published between 2020 and 2025 were selected, which addressed the application of the protocol in intensive and emergency settings. **RESULTS:** Studies show that FAST-HUG contributes to improved clinical outcomes by promoting adherence to high-impact preventive measures, such as glycemic control, thromboembolic prophylaxis, and proper positioning. One study indicated that, even in the absence of a formal protocol, professionals spontaneously incorporate some of its components, although they report difficulties in full implementation due to lack of training and institutional support. The incorporation of the checklist into clinical rounds proved effective in standardizing procedures, reducing adverse events, and optimizing communication between teams. **CONCLUSION:** The structured implementation of FAST-HUG in ICUs and emergency departments presents itself as a viable, safe, and clinically relevant strategy. In addition to promoting the standardization of care practices, it fosters patient-centered, collaborative, and evidence-based care. Strengthening institutional protocols and providing continuous education for the teams are crucial for the success and sustainability of this model's application.

48. SCHISTOSOMIASIS: ANALYSIS OF THE EPIDEMIOLOGICAL INCIDENCE OF CASES AND ADVANCES FROM 2016 TO 2021 IN THE STATE OF MARANHÃO

Geovanna de Almada Oliveira¹, Carolina Oliveira Fossêca¹ and Anne Karine Martins Assunção¹.

¹ Federal University of Maranhão

INTRODUCTION: *Schistosomiasis* is a parasitic endemic disease with a strong presence in Maranhão due to the existence of favorable environments for the proliferation of the intermediate host, snails of the *Biomphalaria* genus. Transmission occurs through contact with water contaminated by *Schistosoma mansoni* cercariae, leading to clinical manifestations ranging from asymptomatic forms to severe cases. **OBJECTIVE:** To analyze the incidence of reported schistosomiasis cases in Maranhão between 2016 and 2021, evaluating the epidemiological evolution of the disease and its fluctuations. **METHODS:** This is a descriptive, retrospective, and quantitative epidemiological study covering the years 2016 to 2021. Data were obtained from the PCE (Schistosomiasis Control Program), through the Tabnet/DATASUS platform database and the population projection table for Brazil and federal units, obtained from the IBGE portal. The variables analyzed were the number of cases, tests, positivity percentage, and the total population of the state of Maranhão. **RESULTS:** During the studied period, 11,283 cases of schistosomiasis were registered in Maranhão. The number of cases peaked in 2019, with 40 cases per 100,000 inhabitants, and had its largest reduction in 2020, dropping to 15 cases per 100,000 people. However, the downward trend is not sustained when comparing data from 2016, with 17 cases per 100,000 inhabitants, and 2021, which registered a slight increase to 24 cases per 100,000 people. Also in 2016, 45,747 screening tests were performed, the second-highest amount in the analyzed period. In 2018, this number peaked at 55,795 tests. In the following years, this number showed a reduction, with 50,842 tests in 2019, 20,427 in 2020, and 25,571 in 2021. However, the test positivity percentage was inversely proportional to the decline in the number of positive cases and the performance of tests, as its lowest rate occurred in 2016, corresponding to only 2.54% of the tests performed, but it reached 6.77% in 2021. **CONCLUSION:** Schistosomiasis showed significant reductions in its incidence rate,

especially during the period of social isolation due to the COVID-19 pandemic. However, the increase in this rate in 2021 and the persistence of the disease in Maranhão demonstrate the need for public policies for prevention and awareness regarding this endemic disease.

49. DEATHS FROM POLYNEUROPATHIES IN BRAZIL FROM 2014 TO 2023

Osean Maximilyan Camara Pereira¹, Marcello De Freitas Costa Rodrigues Filho¹, Samuel Victor Soares De Carvalho¹, and Consuelo Penha Castro Marques¹

¹ Federal University of Maranhão

INTRODUCTION: Polyneuropathies are generally chronic autoimmune diseases and among the most common. They present in a typical form (symmetric sensory and motor symptoms lasting eight weeks or more) or an atypical form (predominantly focal, sensory, motor, distal, or asymmetric symptoms). Immunomodulatory treatments allow stabilization or partial reduction in disease progression in most patients. The definition encompasses all dysfunctions affecting peripheral nerves, based on the topographical distribution of alterations. Throughout its symptomatic course, functional limitations occur, which negatively impact the quality of life of those affected. **OBJECTIVE:** To study the profile of deaths from polyneuropathies in Brazil between 2014 and 2023. **METHODS:** A quantitative, descriptive, time-series epidemiological study was conducted on deaths from polyneuropathies in Brazil between 2014 and 2023. Secondary data were obtained from the Brazilian Unified Health System Information Department (DATASUS) — Mortality Information System (SIM). Data were tabulated in Excel and expressed in absolute numbers and frequencies. **RESULTS:** There were 5,888 deaths from polyneuropathies during the 10-year study period. The Southeast region had the highest number of deaths (n=2,749), followed by the Northeast (n=1,335). The year 2022 recorded the highest peak with 671 cases. The 60–69 age group (n=1,050) was the most affected. Males predominated, accounting for 61% of the sample. The most affected race was white (52%), followed by brown (36%). Individuals with 12 or more years of schooling had the lowest number of deaths (n=449). Regarding marital status, single individuals (n=2,083) were the most frequent, followed by married (n=1,826). As for the place of occurrence, hospitals (80%) and homes (14%) were most common. **CONCLUSION:** Although polyneuropathies represent a relatively low number of deaths, they showed a growing trend in recent years, being more common among men, white individuals, singles, those aged 60–69 years, and hospital occurrences. Less frequent among people with higher education levels, these diseases remain poorly understood and diagnosed. Preventive and diagnostic measures, along with improved professional training and health education, are needed to enhance awareness within academic and general communities, aiming to improve diagnosis, treatment, and reduce mortality rates.

50. MORTALITY FROM ALZHEIMER'S DISEASE IN THE NORTHEAST OF BRAZIL FROM 2014 TO 2023

Osean Maximilyan Camara Pereira¹, Marcello De Freitas Costa Rodrigues Filho¹, Samuel Victor Soares De Carvalho¹, and Consuelo Penha Castro Marques¹

¹ Federal University of Maranhão

INTRODUCTION: Alzheimer's disease is a progressive and irreversible neurodegenerative disorder that affects millions of people worldwide and represents the most common form of

dementia. Its pathogenesis involves complex brain alterations, including the accumulation of beta-amyloid plaques and neurofibrillary tangles, leading to neuronal degeneration and loss of synaptic connections. Symptoms include memory loss, language difficulties, spatial perception problems, and personality changes. It is a major public health concern, especially in the context of population aging. **OBJECTIVE:** To investigate deaths from Alzheimer's disease in the Northeast of Brazil between 2014 and 2023. **METHODS:** A quantitative, descriptive, time-series epidemiological study was conducted on deaths from Alzheimer's disease in Brazil from January 2014 to December 2023. Secondary data were obtained from the Brazilian Unified Health System's DATASUS platform — Mortality Information System (SIM). Data were expressed in absolute numbers and frequencies, tabulated, and analyzed using Microsoft Excel. **RESULTS:** A total of 42,240 deaths from Alzheimer's disease occurred in the Northeast during the study period, showing a continuous upward trend, culminating in 6,092 deaths in 2023. The states with the highest numbers of deaths were Ceará (n=9,208), followed by Bahia (n=9,157) and Pernambuco (n=8,325). Females were the most affected, accounting for 64% of cases. The disease was more frequent among the white race (48%), followed by brown (44%). Individuals with no education or only 1 to 3 years of schooling comprised 54% (n=22,954) of deaths. The 70 years and older age groups predominated, representing 96% of deaths. Regarding marital status, widowed individuals (n=18,782) were the most frequent, followed by married (n=12,203). As for the place of occurrence, deaths occurred predominantly at home (n=20,391) and in hospitals (n=19,401). **CONCLUSION:** Alzheimer's disease has shown a growing trend in mortality in the Brazilian Northeast, mainly affecting individuals aged 70 years or older, with low educational levels, predominantly females, and of brown or white race, particularly those who are married or widowed. Deaths occur primarily at home or in hospitals. These findings highlight the need for increased attention from the public health system to provide support for these patients, aiming to reduce mortality and improve quality of life.

51. EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS FOR CONGESTIVE HEART FAILURE IN ELDERLY PEOPLE IN MARANHÃO BETWEEN 2019 AND 2024

Julia Marreiros Silva¹, Laura Batista Cruz¹, Eslainy Xavier Matos¹, Gabriel Costa Garcia¹, Lara Vitoria Araujo de Oliveira¹, Gabriel Alves Lima² and Ludmilla Santos Silva de Mesquita¹.

¹ State University of the Tocantina Region of Maranhão.

² Federal University of Lavras.

INTRODUCTION: Congestive Heart Failure (CHF) is a multifactorial clinical syndrome usually resulting from pre-existing heart disease. Morphophysiological changes inherent to aging make the elderly population more susceptible to developing CHF. In Brazil, CHF is one of the leading causes of hospitalization among individuals aged 60 years or older, reinforcing the importance of understanding the profile of hospital admissions for CHF among the elderly in Maranhão to inform prevention and clinical management. **OBJECTIVE:** To analyze the epidemiological profile of hospital admissions for CHF in the elderly in Maranhão from 2019 to 2024. **METHODS:** This is a quantitative and descriptive epidemiological study with data from the TabNet/DATASUS platform. Hospital admissions recorded with a primary diagnosis of CHF were selected among individuals aged 60 years or older residing in Maranhão. The variables considered were the number of admissions per municipality, age group, sex, race, and

deaths. Records with missing data were excluded. **RESULTS:** During the period analyzed, 11,566 hospital admissions for CHF in elderly patients were reported. The most affected age group was 70-79 years (36.4%), predominantly male (53.9%) and brown-skinned (86.6%). In terms of mortality, the female population totaled 869 deaths (50.9%). Mortality by age group was decreasing, with 80 years or older with 684 notifications (40.11%), followed by 70-79 years (35.77%) and 60-69 years (24.10%). The municipalities with the highest number of hospitalizations were São Luís with 2,090 hospitalizations, followed by Imperatriz (758) and Santa Inês (456), highlighting the centralization of hospital services in urban centers. **CONCLUSION:** Therefore, hospital admissions for CHF in the elderly in Maranhão were predominantly in men, brown-skinned, aged between 70 and 79 years. However, mortality was higher among women and people aged 80 years or older, indicating that advanced aging and female sex are critical unfavorable factors in the evolution of this syndrome. Furthermore, the concentration of care in metropolitan areas demonstrates the urgency of decentralizing health infrastructure and strengthening primary care in rural areas of the state. Finally, it is concluded that there is a need to strengthen public policies for cardiovascular prevention aimed at the elderly population, making it imperative that CHF prevention begin early.

52. PROFILE OF HOSPITALIZATIONS AND DEATHS DUE TO MOTORCYCLE ACCIDENTS IN THE MUNICIPALITY OF PINHEIRO-MA FROM 2020 TO 2024

Leonardo Gabriel Franco de Jesus¹, Jacyara Castelo Branco Soares¹, Antônio Eduardo Resplandes Macedo¹, Carine Monique Alves de Araújo Cutrim¹ and Livia dos Santos Rodrigues¹.

¹ Federal University of Maranhão.

INTRODUCTION: Motorcycle accidents represent a serious public health problem, especially in medium-sized municipalities such as Pinheiro (MA). The high frequency of hospitalizations and deaths imposes significant impacts on the healthcare system. **OBJECTIVE:** To describe the epidemiological profile of hospital admissions and deaths resulting from motorcycle accidents in the municipality of Pinheiro-MA from 2020 to 2024, with emphasis on sociodemographic variables, healthcare costs, and the temporal evolution of the indicators. **METHODS:** This is a descriptive, quantitative study based on secondary data from the Hospital Information System (SIH/SUS), available on the DATASUS platform, referring to hospitalizations and mortality due to motorcycle accident injuries (International Classification of Diseases – ICD-10 codes: V20–V29). The study population included all victims who were hospitalized or died in the municipality of Pinheiro-MA during the period from 2020 to 2024. The analyzed variables were age group, sex, and color/race. Statistical analysis was performed using Microsoft Excel (Office 2021), and the mortality rate was calculated as the ratio between the number of deaths and the number of hospitalizations, multiplied by 100. Since public domain data were used, ethics committee approval was not required. **RESULTS:** A total of 1,717 hospitalizations due to motorcycle accidents were recorded in Pinheiro-MA. Of these, 75.19% (1,291 cases) were male, the 20–59 years age group accounted for 76.77% (1,318 cases), and 46.54% were self-declared as brown (mixed race). It is noteworthy that 48.22% of the cases lacked information on race/color, indicating possible underreporting or data entry errors. During the analyzed period, 34 deaths due to motorcycle accidents were reported, 38.24% of which occurred in 2023 (13 deaths). The average mortality rate was 1.98%, being highest in 2023 (3.57%) and lowest in 2021 (0.96%). The total hospital costs associated

with the accidents amounted to R\$ 1,363,604.85, with 2022 being the most costly year (R\$ 319,028.45) and 2024 the least (R\$ 226,168.40).

CONCLUSION: These findings reveal the significant social, economic, and healthcare impact that motorcycle accidents have caused to the local health system. The results highlight the urgent need for traffic safety education and awareness measures, specifically targeting motorcyclists and tailored to the identified demographic profile.

53. EVALUATION OF THE ANTIOXIDANT ACTIVITY OF THE PEEL OF THE BURITI FRUIT (MAURITIA FLEXUOSA)

Poliana Sousa Rapozo¹, Aramys Silva Reis¹.

¹ Federal University of Maranhão.

INTRODUCTION: Oxidative stress is an imbalance between pro-oxidants and antioxidants, resulting in conformational and oxidative changes in key biomolecules. Diseases such as diabetes mellitus, neurodegenerative disorders, and cardiovascular diseases are associated with this imbalance. Several substances, such as phenolic compounds, act as antioxidants, inhibiting the development of pathologies linked to oxidative stress. Phenolic compounds present in plant species have been shown to be important antioxidant agents. *Mauritia flexuosa* (buriti) has been studied for its pharmacological properties, but studies have focused on the oil or pulp of the fruit. The antioxidant potential of the fruit's peel is still unclear.

OBJECTIVE: Thus, this study evaluated the antioxidant activity of hydroethanolic extract from buriti bark in vitro. **METHODS:** Initially, a hydroethanolic extract of buriti bark (EEBu) was prepared at a ratio of 1:4 (buriti bark: 70% hydroethanolic solution). To determine antioxidant activity using the DPPH radical method, different concentrations of EEBu were added to a methanolic solution of DPPH, and the absorbance readings were subsequently taken. The lipid peroxidation inhibition capacity of EEBu was evaluated by the thiobarbituric acid reactive species assay, in which secondary components (malondialdehyde) of a lipid matrix (egg yolk) were measured. In addition, a cytotoxicity assay was performed using the MTT method in GM07492A human fibroblast cells. The cells were exposed to EEBu at concentrations of 500, 100, 20, 4, and 0.8 µg/mL for 24 hours, and cell viability was evaluated by formazan formation and absorbance reading at 550 nm. The results were analyzed using GraphPad Prism 8 software. **RESULTS:** In the antioxidant assay, EEBu showed dose-dependent activity in capturing DPPH radicals, with an IC₅₀ of 6.68 µg/mL. In the lipid peroxidation assessment, the extract presented an IC₅₀ of 150 µg/mL. In the cytotoxicity test, the IC₅₀ was 513.9 µg/mL, indicating low toxicity for the cell line used.

CONCLUSIONS: The extract from the bark of *Mauritia flexuosa* has an antioxidant effect, inhibiting DPPH radical scavenging and lipid peroxidation, in addition to low cytotoxicity in vitro. These results indicate its potential as a therapeutic agent against oxidative stress.

54. IMMUNOLOGICAL MARKERS AND MONITORING OF LUPUS NEPHRITIS: A SYSTEMATIC REVIEW

Sarah Lethicya do Nascimento Ferreira¹ and Milena Belém Leitão Mendonça Moraes¹.

¹ University Center of Maranhão.

INTRODUCTION: Systemic lupus erythematosus (SLE) is a chronic, inflammatory, systemic autoimmune disease with exacerbations and remissions. It predominates in non-Caucasian women aged 20 and older. Pathogenesis includes immune tolerance failure, excess autoantibodies, immune complexes (IC), and activation of the complement system (CS). Lupus nephritis (LN) is a serious

complication of SLE, subdivided into classes based on renal biopsy, the gold standard for diagnosis. The reaction of autoantibodies and autoantigens forms IC, which, deposited in the kidneys, activate CS and recruit leukocytes. Diagnostic criteria for SLE include antibodies against Smith proteins (anti-Sm), specific for SLE and those used to monitor activity and LN, against DNA (anti-dsDNA), and against the first component of the classical pathway, C1q, which eliminates IC (anti-C1q). **OBJECTIVE:** This work aims to review the scientific literature on the use of immunological markers to monitor lupus nephritis. **METHODS:** This is a systematic literature review conducted in the Pubmed and SciELO Brazil databases, covering publications between 2012 and 2024. The authors adopted the Health Sciences Descriptors (DeCS): "Lupus Nephritis," "Autoantibodies," and "Complement." Articles in Portuguese and English were included, excluding duplicate studies, narrative reviews, and studies with small sample sizes or those outside the scope. Selection was based on reading titles, abstracts, and full text. A total of 11 articles were included after critical analysis of their content. **RESULTS:** According to evidence, anti-dsDNA and SC (C3 and C4) are traditionally useful in monitoring SLE. Excessive activation of the classical SC pathway induces a reduction in serum C3 and C4 levels, suggesting active SLE and proliferative LN. However, SC has low sensitivity and specificity in relapses and is insufficient in isolation due to the pleomorphic trait of SLE, with distinct combinations of organ involvement. Suspicion of LN is reinforced by a decrease in SC and high titers of anti-C1q and anti-dsDNA. Anti-C1q is crucial in the pathogenesis of LN due to failure to remove IC from the kidneys, detected in active SLE and elevated in classes III/IV LN; it is a strong antibody. **CONCLUSION:** We conclude that these markers are relevant for monitoring active SLE and LN, along with renal biopsy and urine tests. LN is a major challenge in SLE, always seeking to avoid sclerosing conditions.

55. ANALYSIS OF HOSPITALIZATIONS FOR VIRAL ENCEPHALITIS IN MARANHÃO BY AGE GROUP AND MACROREGIONS (2020–2024)

Ana Gabriela da Silva Nascimento¹, Isa Gabrielle Ferreira Rêgo¹, Lenora Cristina Freitas Aragão¹, Jessica Raiane Santos Souza², Ana Vitória Dias Ribeiro Gonçalves¹, Marcela Ferreira Santos¹ and Ian Jhemes Oliveira Sousa¹.

¹ Faculty of Health Sciences Pitagoras de Codó.

² Federal University of Maranhão – Pinheiro

INTRODUCTION: Viral encephalitis (VE) is a serious neurological condition with a high hospitalization rate and significant morbidity and mortality, requiring continuous epidemiological surveillance. Its most common causes include herpesviruses types 1 and 2, non-polio enteroviruses, and arboviruses, which affect the central nervous system through direct infection or autoimmune processes. Given the high morbidity and mortality, early diagnosis is essential to prevent permanent neurological sequelae and death. **OBJECTIVE:** To analyze the profile of hospitalizations due to CVE in Maranhão in the five-year period (2019 to 2023), according to age group and macro-region of residence. **METHODS:** This is a descriptive study based on data from the SUS Hospital Information System (SIH/SUS) for the state of Maranhão, from 2019 to 2023. The variables analyzed were: age group, sex, length of hospital stay, deaths, macro-region of residence, and case fatality rate. Because these are public and secondary data, no ethical approval was required. The data were processed by Gap Pad Prisma®. **RESULTS:** A total of 612 hospitalizations due to CVE were recorded in the state, with an age distribution from 0 to 80 years. The highest concentration occurred in the 1 to 4 year old age group

(21.6%), with childhood and adolescence accounting for 54.25% of cases. Despite this, there was no significant correlation between age and the number of hospitalizations. The fatality rate was higher among men (69.7%). An inverse relationship was observed between age and the average length of hospital stay ($R^2 = -0.9$), with longer hospital stays among younger individuals. The North Macroregion had the highest number of hospitalizations (291), but the highest fatality rate was recorded in the South Macroregion (8.9%), almost triple that observed in the North (3.8%) and more than four times higher than that of the East (2.1%). **CONCLUSION:** The data reveal an age pattern concentrated in childhood and adolescence, longer hospitalization times for children, a predominance of male deaths, and regional inequalities. The high mortality rate in the Southern Macroregion highlights weaknesses in care, requiring urgent actions to improve the network, intensify surveillance, and improve clinical support. Although rare, CVE exhibits a specific territorial and population pattern in Maranhão, reinforcing the importance of regional prevention and management strategies. The limitations of this study relate to the use of secondary data from the SIH/SUS (National Health System/Unified Health System). Therefore, this study contributes to the need to better explore local-regional scenarios in search of metrics for improved prophylactic, diagnostic, and therapeutic approaches.

56. TRENDS AND PROFILE OF HOSPITALIZATIONS FOR LEPROSY IN MARANHÃO: ANALYSIS COMPARISON

Isa Gabrielle Ferreira Rêgo¹, Lenora Cristina Freitas Aragão¹, Marcela Ferreira Santos¹, Ana Gabriela da Silva Nascimento¹, Ana Vitória Dias Ribeiro Gonçalves¹ and Pedro Agnel Dias Miranda Neto¹.

¹ Faculty of Health Sciences Pitágoras of Codo

INTRODUCTION: Leprosy is a chronic disease caused by the bacterium *Mycobacterium leprae*, which primarily affects the skin and nerves located in the extremities. It is a notifiable condition that still has a high burden in some regions of Brazil, especially in Maranhão. Hospitalizations due to leprosy are indicative of severe cases or complications resulting from late diagnosis and failures in primary care. Despite the importance of this indicator, there is a scarcity of studies focusing on hospitalizations due to this disease in the state. **OBJECTIVE:** To analyze the trends and epidemiological profile of hospitalizations due to leprosy in Maranhão, comparing the periods 2012-2014 and 2022-2024. **METHODS:** This is a cross-sectional study of hospitalizations in the population of Maranhão between 2012 and 2014 and between 2022 and 2024. Data collected and analyzed were from the Informatics Department of the Unified Health System (SUS), according to the following variables: hospitalizations, ICD-10, sex, municipalities, and period. For statistical analysis, we used the risk rate per 100,000 inhabitants and the χ^2 test. Trend analysis was performed by comparing hospitalization rates and percentage increases between the two three-year periods (2012-2014 and 2022-2024). Comparisons between sexes were assessed using the chi-square (χ^2) test, which verified whether the distribution of hospitalizations by sex was statistically different from the expected population distribution, assuming a significance level of $p < 0.05$. Due to the use of secondary data in the public domain, there was no need for ethics committee approval. **RESULTS:** Hospitalizations for leprosy in Maranhão increased by 33.83% in total, going from 931 cases in the 2012-2014 period to 1,246 in the 2022-2024 period. Males had a higher number of hospitalizations (666 and 914, respectively) and a higher percentage increase of 32.23% than females (25.28%). To contextualize hospitalizations in relation to the population at risk,

rates per 100,000 inhabitants were calculated. These rates show that males have a significantly higher hospitalization rate than females in both periods, providing a higher proportional incidence among men. Both rates increased throughout the decade. The chi-square test revealed a statistically significant difference in the distribution of hospitalizations by sex compared to the population proportion (p -value < 0.001 , in both periods). **CONCLUSION:** The data show a growing burden of leprosy in Maranhão, with an increase in hospitalizations among men. The results indicate a delayed demand for health care among men, reinforcing the need for surveillance, early diagnosis, and public policies aimed at combating leprosy and social stigma.

57. URINARY TRACT INFECTION IN INSTITUTIONALIZED ELDERLY PEOPLE: ASSOCIATED FACTORS AND IMPLICATIONS FOR HEALTH CARE

Sophie Marie Machado Aragão¹, Gabriel Costa Garcia², Gabriel Alves Lima³, Cecília Giovanna dos Santos Sarmiento², Lara Carvalho Ferreira Medeiros¹, Juliana de Oliveira Ramos Maia¹, and Ludmila Santos de Silva Mesquita².

¹ Federal University of Maranhão

² State University of the Tocantina Region of Maranhão

³ Federal University of Lavras

INTRODUCTION: Brazil is currently undergoing a demographic transition, with a growing number of elderly people in the country, represented by a decline in mortality rates and an increase in life expectancy. Aging is a natural and continuous process, involving changes, among which those affecting the urinary system and responsible for facilitating urinary tract infections (UTIs) stand out. The risk is even more pronounced in institutionalized elderly people, who often have greater immune fragility and functional dependence. **OBJECTIVE:** Analyze the main factors associated with the prevalence of urinary tract infections in institutionalized elderly people in view of the growth of this population segment and the implications for health care. **METHODS:** An integrative literature review was conducted in the PubMed, SciELO, and Google Scholar databases between January and July 2025, using the keywords "elderly" AND "urinary tract infection." Articles published between 2017 and 2025 in Portuguese, English, or Spanish were included. Observational and quasi-experimental studies based on primary data were considered, in addition to a systematic review. Duplicates and articles not directly related to the topic were excluded. The results were analyzed descriptively and comparatively. **RESULTS:** The analysis of the studies showed that UTIs account for approximately 15 to 30% of infections affecting the population residing in nursing homes or long-term care facilities in Brazil, which currently house approximately 161,000 people. They represent 25% of geriatric hospitalizations and nearly 6.2% of deaths from infectious diseases. The main factors associated with the high prevalence of UTIs in this group include: urinary incontinence and the use of absorbent devices that require strict hygiene care, the significant number of women, in whom the greater predisposition to UTIs is further increased with aging, immunosenescence, the high degree of functional dependence, and living in a communal space—which favors the spread of bacteria among individuals, in addition to the large number of comorbidities and functional impairments present in the majority of this population. **CONCLUSION:** It can be concluded that physiological (immunosenescence, gender, functional dependence), clinical (pathological impairments and comorbidities), and social factors (hygiene and community experience) are associated with the

occurrence of UTIs in institutionalized elderly individuals. Therefore, there is a need to provide multidisciplinary strategies involving training, surveillance, and prevention in order to reduce the incidence and improve the quality of life of this vulnerable and growing population.

58. REPERCUSSIONS OF RECURRENT VULVOVAGINAL CANDIDIASIS ON WOMEN'S SEXUAL HEALTH AND QUALITY OF LIFE: AN INTEGRATIVE REVIEW.

Pâmela Carolinny Coelho da Silva Costa¹, Yasmin Rodrigues Vieira Araujo¹, Milena Sousa Campos¹, and Yvila Coêlho de Sousa¹.

¹ University Centre of Maranhão.

INTRODUCTION: Recurrent vulvovaginal candidiasis (RVC) is a fungal infection characterized by four or more episodes within a 12-month period, negatively affecting women's physical, emotional, and sexual health. RVC profoundly impacts women's daily lives, causing several symptoms that compromise not only physical well-being but also sexual performance and self-esteem. **OBJECTIVE:** This study aims to analyze the repercussions of RVC on women's sexual health and quality of life. **METHODS:** It is an integrative literature review, with a systematic search conducted in the SciELO and PubMed databases, considering publications between 2004 and 2025. Inclusion criteria encompassed studies in Portuguese or English addressing the impact of recurrent vulvovaginal candidiasis on women's sexual health and quality of life. After applying inclusion and exclusion criteria, ten studies were selected and analyzed. **RESULTS:** The analysis revealed that, regarding sexual health, RVC is associated with symptoms such as intense itching, burning, and genital discomfort. These symptoms reduce sexual desire and frequency of intercourse, while generating embarrassment, insecurity, and difficulty in intimacy with partners. Concerning quality of life, women with RVC showed significantly lower scores in physical, psychological, social, and environmental domains, as well as reports of sleep disturbances, fatigue, chronic pain, and feelings of shame and frustration. Moreover, deficiencies in counseling and support provided by healthcare services were identified, leading many women to self-medication or treatment abandonment. These findings highlight the need for educational strategies, psychological support, and multidisciplinary care centered on women's needs. **CONCLUSION:** Recurrent vulvovaginal candidiasis has a significant impact on female quality of life and sexual health, going beyond physical discomfort and influencing emotional and social aspects. Such repercussions emphasize the importance of a multidisciplinary approach, with accurate diagnosis, effective treatment, guidance on healthy habits, and psychological support to minimize the effects of this condition on women's lives.

59. RADIAL NEUROPATHY ASSOCIATED WITH HUMERAL SHAFT FRACTURES: AN INTEGRATIVE REVIEW FROM 2015 TO 2024.

Mikaelly Cunha Lima¹, Alice Beatriz Tomaz Tavares¹, Stefanny Rafaelly Freitas Garcia¹, Kivia Mayana Santos de Oliveira¹ and Luis Felipe Pinheiro Castro¹

¹ Federal University of Maranhão

INTRODUCTION: The radial nerve is the nerve structure most commonly affected by traumatic injuries to the upper limbs, with diaphyseal fractures of the humerus being one of the main causes of this neuropathy, primarily due to the anatomical and functional relationships between the humerus, the radial nerve, and the other structures of the arm. **OBJECTIVE:** The present study aims to

understand and characterize the relationship between radial neuropathy and humeral shaft fractures. **METHODS:** This is an integrative literature review on radial neuropathy associated with diaphyseal humeral fractures, covering the period from 2015 to 2024, using the SciELO, BVS, and PubMed databases. The search was conducted using the following descriptors: "Radial Neuropathy," "Humeral Fractures," and "Diaphyseal Fractures," combined with Boolean operators (AND, OR). Initially, 22 studies were identified, after which exclusion criteria were applied: abstracts or incomplete articles, publications not directly related to the topic, duplicate works, or articles with restricted access, resulting in 12 articles. **RESULTS:** Based on the studies included in the review, it is understood that radial neuropathy associated with humeral shaft fractures can occur both due to the trauma mechanism and through iatrogenic injuries. The etiology of iatrogenic injury arises from manipulation or repositioning, such as during osteosynthesis, causing neurapraxia or nerve compression by the plate. However, it is worth noting that most cases are caused by trauma and tend to be more severe depending on the force applied. The profile of radial neuropathy occurred mainly in males, with an average age of 30 years, and was primarily due to automobile accidents. **CONCLUSION:** The review demonstrates that radial neuropathy associated with humeral shaft fractures results in functional impairment, which especially compromises the individual's daily activities, such as the simple act of extending the wrist. However, in most cases, the prognosis is favorable, mainly due to the occurrence of temporary neuropraxia. As a diagnostic tool, ultrasound has shown high efficiency, given its accuracy and non-invasive nature. Regarding treatment, it is concluded that early nerve exploration is not effective, being indicated only in cases of suspected entrapment. Therefore, conservative management is the preferred approach, with approximately 90% functional recovery.

60. INTRAUTERINE DIAGNOSIS OF CONGENITAL HEART DISEASES AND ITS IMPACT ON NEONATAL OUTCOMES

Mariana Tereza Carneiro de Moraes¹, Willk Mário Pinto França Lopes¹ and Rachel Vilela de Abreu Haickel²

¹ Federal University of Maranhão

² Dom Bosco Higher Education Institution

INTRODUCTION: fCongenital heart diseases (CHDs) account for nearly one-third of all pathologies diagnosed in newborns, and their treatment remains a significant challenge, especially in the context of prenatal and neonatal care. This is primarily due to the low rate of early diagnosis for these medical conditions. Consequently, the following question arises: how can intrauterine diagnosis of cardiovascular diseases facilitate the management of neonates with CHDs and increase their survival rates? **OBJECTIVE:** This study aims to analyze how the prenatal diagnosis of congenital heart diseases can influence the quality of treatment and, consequently, improve the survival of newborns affected by these conditions. **METHODS:** This is an integrative literature review guided by a central research question. Searches were conducted in the PubMed, Embase, SciELO, and LILACS databases, covering the period from 2013 to 2024. Primary studies published in Portuguese and English were included, using the following descriptors: "cardiopatas congênitas," "diagnóstico pré-natal," "congenital heart disease," and "early diagnosis." Initially, 11 articles were identified, but only 8 met the inclusion criteria and were selected for review. **RESULTS:** Compared to postnatal detection, intrauterine diagnosis of congenital heart diseases was associated with a reduced risk of neonatal death due to preoperative complications. It also significantly decreased perioperative mortality rates in newborns undergoing surgical

correction for transposition of the great arteries. Furthermore, prenatal detection enabled healthcare teams to be aware of the condition in advance, facilitating better preparation and faster implementation of specific and advanced therapeutic interventions. Early cardiac surgeries, made possible through prenatal diagnosis, led to improved survival rates and quality of life in 90% to 95% of patients. Among neonates diagnosed with both CHDs and chromosomal abnormalities, there was a 70% increase in mortality rates compared to those without chromosomal mutations, reinforcing the critical importance of prenatal diagnosis in these cases.

CONCLUSION: Intrauterine diagnosis of CHDs allows for early identification of fetal medical conditions, leading to more effective neonatal management, better planning and safety of cardiac surgeries, and faster application of appropriate treatments. These factors contribute to more favorable neonatal outcomes, including among infants with associated chromosomal disorders.

61. INTEGRATIVE REVIEW OF RECENT EVIDENCE ON CRYOABLATION FOR CHRONIC PAIN

Manuela Régia Ferreira Martins¹, Any Karhem Sousa Matos¹, Klécia Patrícia de Melo Lindoso¹, Leticia Pinheiro Nogueira¹, Lunna Figueiredo Leal¹, Maria Regina de Melo Andrade¹ and José Osvaldo Barbosa Neto¹

¹ State University of Maranhão

INTRODUCTION: Chronic pain represents a significant challenge, requiring effective and safe therapeutic approaches. In this context, minimally invasive techniques such as cryoablation, including cryoanalgesia and cryoneurolysis, have emerged as promising alternatives in pain management. **OBJECTIVE:** The aim of this study was to perform an integrative literature review of evidence published from 2020 to 2025 on the efficacy, safety, and clinical applications of cryoablation in the management of chronic pain, as well as to identify methodological gaps and future research perspectives. **METHODS:** An integrative review was carried out with a systematic search in the PubMed and Scopus databases using the descriptors "cryoanalgesia," "cryoablation," "cryoneurolysis," and "chronic pain," combined with Boolean operators. Nine studies published between 2020 and 2025 were included, encompassing randomized clinical psychiatric trials, systematic reviews, observational studies, and narrative reviews. Methodological quality was assessed using the Critical Appraisal Skills Programme (CASP) tool. **RESULTS:** The results demonstrate consistent benefits of cryoneurolysis, particularly in knee osteoarthritis, low back pain, and peripheral neuropathies. Clinical trials have shown clinically significant pain reductions in short and medium-term follow-ups, with ultrasound guidance emerging as a key factor. Systematic reviews reinforce the safety of the technique, reporting a low rate of complications and no serious adverse events. However, methodological heterogeneity, characterized by small sample sizes, short follow-up periods, and lack of standardization of technical parameters, limits the generalizability of the findings. Nevertheless, the literature indicates a positive impact on quality of life and a potential reduction in opioid dependence. **CONCLUSION:** Overall, cryoneurolysis represents a promising and safe approach to chronic pain management; however, multicenter studies with stronger methodology and standardized protocols are required to confirm its clinical value and support evidence-based guidelines.

62. ANALYSIS OF THE EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR MENTAL AND BEHAVIORAL DISORDERS FROM 2019 TO 2024.

Mikaelly Cunha Lima¹, Endel Emanuel Carvalho de Sousa¹, Kívia Mayana de Oliveira¹ and José Braz Costa Castro Junior¹.

¹ Federal University of Maranhão

INTRODUCTION: According to the World Health Organization (1993), mental disorders are characterized as a set of clinically recognized symptoms or behaviors, most of which are associated with individual suffering and functional impacts. In the current context, they are among the main challenges for the public health system, due to their high prevalence and the burden of disability they cause. **OBJECTIVE:** To characterize the epidemiological pattern of hospital admissions due to mental and behavioral disorders in the state of Maranhão, from 2019 to 2024. **METHODS:** This is an epidemiological, descriptive study covering the period from 2019 to 2024. The data were extracted from the Hospital Information System (SIH/SUS), using the Informatics System of the Unified Health System (DATASUS), considering the following variables: color/race, sex, age group, diagnosis, and number of hospitalizations per year. **RESULTS:** Between 2019 and 2024, there were 33,733 psychiatric hospitalizations, with an average annual increase of 266 cases, except in 2020. The number rose from 5,061 (2019) to 6,390 (2024). In terms of color/race, whites stood out (12,739), followed by mixed-race (12,047), Asians (1,714), blacks (654), and indigenous people (26). Mixed-race individuals presented the highest number of substance use disorders (2,492), while the white population recorded 90 cases of this condition. By gender, men accounted for 22,936 hospitalizations, nearly twice as many as women (11,022). The most affected age group was 20 to 39 years old, with 17,716 cases among men and 7,436 among women. The most common diagnoses were schizophrenia (15,620), mood disorders (7,115), and alcohol use (5,311). **CONCLUSION:** The profile of hospitalizations revealed sociodemographic inequalities, with a progressive increase in admissions, indicating possible failures in continuity of care and in the psychosocial care network. A higher prevalence of hospitalizations was observed among white individuals, suggesting inequality in access to health services, while substance use disorders were more frequent among mixed-race individuals, reflecting social vulnerabilities. Schizophrenia was the main diagnosis, followed by mood disorders and alcohol use. Men accounted for almost twice as many hospitalizations as women, and the predominant age group was 30 to 39 years, highlighting the socioeconomic impact. The urgency of actions focused on prevention, continuity of care, and equitable access to mental health is emphasized.

63. MORBIDITY AND MORTALITY DUE TO GASTRIC AND DUODENAL ULCERS IN THE STATE OF MARANHÃO BETWEEN 2019 AND 2024

Juliana de Oliveira Lima¹, Bianka Albuquerque de Sousa¹, Larissa da Silva Teixeira¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹ and Douglas Soares da Costa⁷.

¹ Bacabal Pitagoras College

INTRODUCTION: Gastric and duodenal ulcers correspond to lesions in the mucosa of the stomach or duodenum, caused by an imbalance between aggressive agents, such as hydrochloric acid and pepsin, and the protective factors of the mucosal barrier. Among the main causes, *Helicobacter pylori* infection and the chronic use of non-steroidal

anti-inflammatory drugs (NSAIDs) stand out. These affections can result in severe complications, such as gastrointestinal bleeding, perforations, and even death. Thus, continuous monitoring of the occurrence of ulcers and their clinical outcomes is essential to size their impact and support the planning of effective public policies in Maranhão. The objective of this study was to investigate the indicators of morbidity and mortality related to gastric and duodenal ulcers in Maranhão between the years 2019 and 2024. **METHODS:** This is a cross-sectional study, with a quantitative and retrospective approach, based on epidemiological data from hospitalizations due to gastric and duodenal ulcers in Maranhão, in the period from 2019 to 2024. The information was extracted from the SUS Hospital Information System (SIH/SUS), made available by the Department of Informatics of the Unified Health System (DATASUS). The variables analyzed included the number of hospitalizations, the number of deaths, the mortality rate, the average hospital stay, the cost per hospitalization, and the distribution by sex. Data systematization and analysis were performed using Microsoft Excel 2019 software. **RESULTS:** In the studied period, 2,459 hospitalizations due to gastric and duodenal ulcers were reported, with 226 deaths registered, resulting in an average mortality rate of 9.19%. The year 2019 presented the highest index (16.67%), while in 2023 and 2024 the values were 8.56% and 9.11%, respectively. The average length of stay in hospital units was 4.8 days, with an average cost per hospitalization of R\$950.98. The analysis by sex revealed a higher mortality rate among men (9.50%) compared to women (8.69%). **CONCLUSION:** Given this context, the findings evidence a relevant increase in morbidity and mortality due to gastric and duodenal ulcers in Maranhão, mainly among males. The fluctuations in costs and length of stay suggest variations in clinical severity and the response of hospital services over the years. These data reinforce the importance of investments in actions aimed at prevention, early detection, and effective treatment of these diseases.

64. USE OF DELTA OPIOID RECEPTOR AGONISTS IN THE TREATMENT OF DEPRESSION: AN INTEGRATIVE LITERATURE REVIEW

João Pedro José de Faria¹, João Pedro Belaglovis Castelo Branco¹, Mateus Ayrtton Barboza de Melo¹ and Jorge Antônio Meireles Teixeira¹

¹Federal University of Maranhão

INTRODUCTION: Depression is a mental disorder characterized by persistent low mood, anhedonia, and functional impairment. Although conventional antidepressants modulate monoaminergic systems, evidence suggests that the delta opioid receptor (DOR) also plays a role in mood regulation and stress response, emerging as a promising target for fast-acting antidepressant therapies. **OBJECTIVE:** Evaluate the efficacy, safety, and mechanisms of action of selective DOR agonists in the treatment of depression. **METHODS:** This is an integrative literature review conducted in the PubMed database, covering publications from the year 2000 onward. The MeSH descriptors "Opioid delta-Receptor Agonists" and "Depression" were used, combined with Boolean operators. The search retrieved 248 records, from which duplicates, case reports, and articles not directly related to the topic were excluded. After applying the exclusion criteria, 11 articles were included for analysis. **RESULTS:** Classical DOR agonists reduced immobility time in the forced swimming test, in which rodent inactivity in water is interpreted as depressive-like behavior. This reduction suggests acute antidepressant activity without inducing tolerance or increasing dopamine levels in the nucleus accumbens, indicating a low abuse potential. Second-generation compounds maintained efficacy comparable to standard antidepressants in rodent models of chronic

depression induced by bulbectomy, without causing convulsions or motor disturbances. More recent agonists demonstrated rapid antidepressant and anxiolytic effects in rodents, with fewer adverse effects. Although human studies remain scarce, some have reported modulation of neurophysiological biomarkers and changes in human electroencephalographic patterns. Mechanistically, DOR activation regulates dopamine and serotonin release in mesolimbic regions, modulates glutamate in the prefrontal cortex and striatum, and increases the expression of brain-derived neurotrophic factor (BDNF), which may explain its antidepressant effects. **CONCLUSION:** Selective DOR agonists show promising antidepressant potential and a rapid onset of action, without the sedative or abuse-related effects typical of μ -selective opioids. However, their clinical application requires large-scale randomized trials, in-depth safety assessments — particularly regarding seizure risk — and the establishment of dose and chronopharmacology protocols to optimize their efficacy.

65. THE USE OF MEDICINAL CANNABIS IN THE TREATMENT OF REFRACTORY EPILEPSY

Kevyssson Stanler Santos Alves¹, Wanderson Fortes de Sousa¹, Osnar Gustavo de Santana Lima¹, and Bráulio Galdino de Araújo¹.

¹ Federal University of Maranhão.

INTRODUCTION: Refractory epilepsy poses a challenge in clinical practice, with many patients not responding well to conventional drug therapy. In this context, Cannabis sativa compounds have been investigated for this condition due to their interaction with the endocannabinoid system and modulation of neuronal excitability. **OBJECTIVE:** To review the most important findings on the use of medicinal cannabis in the treatment of refractory epilepsy in the last 5 years. **METHODS:** This study consists of an integrative literature review conducted in July 2025 in the PubMed database, using the descriptors "medicinal cannabis," "treatment," and "refractory epilepsy" combined with the Boolean operator "and." Eighty-seven articles were found in the search, of which 18 remained, published in the last five years and in English, with descriptors in the title or abstract, freely accessible, and appropriate for the purpose of this work. **RESULTS:** The use of medicinal cannabis compounds has shown promise in the treatment of refractory epilepsy. Most observational studies have shown a significant reduction in seizures, with complete remission in a minority of patients, particularly with the combination of cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC), which can optimize this response. In addition to this seizure reduction, improvements in sleep and mood were also observed. The main adverse events observed were generally mild to moderate, mainly drowsiness and decreased appetite, demonstrating that the therapy is well tolerated. **CONCLUSION:** The use of medicinal cannabis compounds has shown promise in the treatment of patients with refractory epilepsy, with significant reduction in seizures and a low rate of adverse events. Furthermore, to generalize these findings, further studies with longer follow-up periods and standardized doses of the compounds are needed.

66. EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS DUE TO VASCULAR CEREBRAL ACCIDENTS IN MARANHÃO FROM 2020 TO 2024

Samyra Elouf dos Santos Simão¹, Kevyssson Stanler Santos Alves¹, and Bráulio Galdino de Araújo¹.

¹ Federal University of Maranhão

INTRODUCTION: According to the Brazilian Stroke Society, stroke is defined as a sudden neurological deficit caused by obstruction or rupture of arteries or veins. It represents the leading cause of

disability worldwide and the second leading cause of death among Brazilians. Its occurrence is intrinsically associated with sociodemographic factors such as ethnicity, age, and sex. In the state of Maranhão, understanding the epidemiological profile of hospitalizations due to stroke is crucial to support evidence-based public health policies and to implement efficient prevention strategies targeted at the most affected populations. In this context, this study aims to analyze the pattern of hospital admissions for stroke in the state of Maranhão between 2020 and 2024, emphasizing the characteristics of the affected population. **OBJECTIVE:** To analyze the epidemiological profile of hospitalizations due to stroke in the state of Maranhão between 2020 and 2024. **METHODS:** This is a retrospective, descriptive, cross-sectional epidemiological study based on secondary data obtained from the Hospital Information System (SIH/SUS) regarding hospitalizations for stroke in Maranhão between 2020 and 2024. The analyzed variables included sex, race/skin color, and age group. **RESULTS:** During the study period, 26,544 hospitalizations due to ischemic or hemorrhagic stroke were recorded in the state of Maranhão. Of these, 53.6% were males (n=14,215). Regarding race/skin color, 17,966 were classified as brown (67.6%), 669 as yellow (2.5%), 610 as white (2.3%), 310 as black (1.1%), and 59 as Indigenous (0.1%). Concerning age distribution, the most affected group was 70–79 years old, accounting for 26.3% (n=7,000) of hospitalizations, followed by those aged 80 years or older, representing 23% (n=6,108), and those aged 60–69 years, comprising 22.3% (n=5,934). **CONCLUSION:** The study demonstrated that, in Maranhão, between 2020 and 2024, stroke remained an important cause of hospital admissions, predominantly affecting males and individuals identified as brown, particularly those aged 60 years or older, who accounted for 46.9% of cases. These findings highlight the need for targeted preventive and health promotion strategies addressing cerebrovascular diseases in the state. Understanding the epidemiological profile of stroke-related hospitalizations is essential to guide effective public health policies and to mitigate the burden of this condition on the population of Maranhão.

67. CONGENITAL MICROCEPHALY IN BRAZIL: A SPATIAL AND TEMPORAL ANALYSIS BETWEEN 2010 AND 2023

Guilherme Eduardo Noleto de Sousa Santana¹ AND Luciana Oliveira dos Santos¹

¹ State University of the Tocantins region of Maranhão

INTRODUCTION: Congenital microcephaly is a malformation characterized by inadequate brain development, which is associated with a reduction in head circumference. Although it is strongly linked to the Zika virus (ZIKV) outbreak in Brazil, it is a heterogeneous condition with multiple etiologies, as it may be associated with genetic factors, maternal conditions, or infections—namely syphilis, toxoplasmosis, rubella, cytomegalovirus, herpes, and ZIKV itself (forming the acronym STORCH-Z). Although incurable, early diagnosis is essential, as it enables improvements in treatment and quality of life. **OBJECTIVE:** To analyze the spatial and temporal patterns of microcephaly in Brazil between 2010 and 2023. **METHODS:** This is an analytical, descriptive, and cross-sectional study based on data from the Live Birth Information System (SINASC) of the Department of Informatics of the Brazilian Unified Health System (DATASUS). The spatial distribution of the disease was evaluated by region over the period, which was divided into three stages: before the ZIKV outbreak (2010–2014), during (2015–2017), and after the outbreak (2018–2023). Data were tabulated using Microsoft Excel.

RESULTS: Before the virus outbreak, the national annual average of microcephaly cases was 170.6, with the highest rates observed in the Southeast (75.6), Northeast (46.2), and South (22.8) regions. During the outbreak, the national average increased to 1,532 cases, with most occurrences in the Northeast (837), Southeast (469.3), and North (109) regions. Finally, after the outbreak, there was a stabilization, with an average of 347 cases per year nationwide, mainly affecting the Southeast (168.8), Northeast (92.2), North (31.8), and South (31.3) regions. **CONCLUSION:** The data demonstrate that the ZIKV outbreak represented an epidemiological milestone, causing a significant increase in congenital microcephaly cases, especially in the North and Northeast regions. However, the persistence of relevant records before and after the outbreak reveals the multifactorial nature of the disease, showing that its causes are not limited to viral infection. In this context, expanding diagnostic capacity, training professionals to recognize multiple associated etiologies, and strengthening public policies aimed at prevention, follow-up, and family support become essential. Recognizing the complexity of microcephaly is crucial to overcoming reductionist approaches and promoting more effective actions to address the condition.

68. IMPACT OF ELECTRONIC DEVICES ON SYMPTOM EXACERBATION IN CHILDREN WITH ASD: A SYSTEMATIC REVIEW

Amancia Rafaela Camara Machado¹ and Camila Moraes da Cruz¹

¹Medical Education Institute (IDOMED) – Faculty Edufor

INTRODUCTION: The excessive use of electronic devices by children has been associated with negative impacts on child development, especially in individuals with Autism Spectrum Disorder (ASD), a condition characterized by deficits in communication, social interaction, and restrictive and repetitive behaviors. Children with ASD tend to have a higher propensity to use screens for prolonged periods, which can exacerbate symptoms of ASD, although this relationship is not universal and depends on familial and individual factors. Recent scientific literature indicates that this prolonged exposure to screens compromises cognitive, social, and emotional development, intensifying difficulties in emotional regulation, sleep disturbances, increased anxiety, depression, repetitive behaviors, and irritability. Given this, it becomes essential to understand the effects of digital exposure in this population. **OBJECTIVE:** This study aimed to correlate the excessive use of electronic devices with the intensification of symptoms in children with ASD, also considering factors such as sleep quality and social behavior, in order to provide support for therapeutic and educational strategies. **METHODS:** A systematic literature review was conducted in the websites PubMed, Scopus, Web of Science, and Google Scholar databases, using the words "autism spectrum disorder," "screen time," "electronic devices," "digital media," "symptoms," "children" and their Portuguese equivalents. Original articles, reviews, and case studies published between 2020 and 2025 that addressed the relationship between screen use (TV, tablets, smartphones, computers) and clinical manifestations in children with Autism Spectrum Disorder were included. **RESULTS:** The analyzed studies demonstrated that excessive exposure negatively affects brain regions such as the prefrontal cortex, temporal cortex, and parietal cortex, which are responsible for attention, planning, language, executive functions, and social processing. Furthermore, it aggravates sensory symptoms, cognitive rigidity, and repetitive behaviors. **CONCLUSION:** It is concluded that, although there is consistent evidence about the

association between excessive screen use and the exacerbation of ASD symptoms, more robust investigations are necessary to substantiate clinical guidelines. Strategies that promote the reduction of screen time and stimulate social interaction are presented as promising complementary therapeutic approaches.

69. ANALYSIS OF THE MEDICAL PROGNOSIS OF PATIENTS WITH HEART FAILURE ACCOMPANIED IN A TERTIARY HEALTH CENTER

Mariana Guimarães Rocha¹, Daniele Beatriz Almeida da Silva¹, Elismar da Cruz Filho¹, Samyra Elouf dos Santos Simão¹, Sara Raquel Ribeiro Pires¹ and José Albuquerque de Figueiredo Neto¹.

¹Federal University of Maranhão

INTRODUCTION: Heart Failure (HF) is a complex condition originated from structural or functional problems that prevent the heart from supplying the necessary blood flow to meet the body's demands. It represents one of the main causes of hospitalization and mortality among chronic diseases, with clinical manifestations that may limit and impact the patients quality of life. Therefore, understanding the factors that affect the prognosis of patients with heart failure is essential to estimate the gravity of the disease and its consequences, facilitating the accompaniment and establishment of adequate treatment. **OBJECTIVE:** This paper aims to analyse the main prognostic factors of heart failure and how certain aspects influence its evolution in the long-term. **METHODS:** Retrospective, analytical and observational study with 235 patients diagnosed with heart failure accompanied in a specialized center. Were analyzed clinical data and outcome in up to 12 months, including death, hospitalizations, going to the emergency and cardiac transplants. There was considered decompensation to the occurrence of any of these events. There were applied the chi-square test to the categorical variables and the Mann-Whitney test to the continuous variables, with a 5% significance. The study was approved by the Ethical Committee in Research under the number 25756919.9.2004.5086. **RESULTS:** There were evaluated 235 patients with heart failure, with an average of 2240 days since the diagnosis. The main etiologies were ischemic (35,3%), hipertensive (22,1%), idiopathic (14%) and chagasic (6%). In 12 months of follow-up, 4,7 % evolved to orbit, 12,8 % were admitted to the hospital and 8,1% went to the emergency, with an average of 1,79 hospitalizations and 1,15 emergencies per patient. No transplant was registered. There were no statistically significant associations between the clinical outcomes with variables such as etiology, previous infarctions, CVA, ICD, CRT or atrial fibrillation ($p > 0,05$), nor difference in the time since the diagnosis between the patients who went to orbit and the others ($p = 0,5102$). **CONCLUSION:** In the period of 12 months, the main clinical outcomes were hospitalizations and going to the emergency, with a low mortality rate and absence of cardiac transplants. The main etiology was ischemic, whilst chagasic was the least prevalent. Despite the average prolonged time since the diagnosis (around 6 years), this factor was not significantly associated with the occurrence of orbits. In the same way, clinical variables frequently related to prognosis, such as etiology, previous infarctions, CVA, ICD, CRT and atrial fibrillation, did not show influence and significant association with the analyzed outcomes. Thus, the results suggest that other factors, in this scenario, may have had more prognostic value than the variables included in this study, indicating the need for further investigation to improve the management of this population.

70. THE SOCIAL IMPACT OF MULTIPLES SCLEROSIS: AN INTEGRATIVE REVIEW

Ana Clara Carvalho Barroso¹, Mateus Ayrton Barboza de Melo¹, Osnar Gustavo de Santana Lima¹ and Bráulio Galdino de Araujo¹.

¹ Federal University of Maranhão - UFMA

INTRODUCTION: Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system that affects more than 2.5 million people worldwide. This condition causes various sensory and motor dysfunctions, predisposing patients to a range of complications that, together with these dysfunctions, significantly impair their quality of life. **OBJECTIVE:** The study aims to synthesize the main impacts of multiple sclerosis on patients' quality of life. **METHODS:** This is an integrative review of articles using the PubMed database. The inclusion criteria were: articles published between 2015 and 2025, articles containing "Quality of Life" or "Stigma" or "Work" and their synonyms, and "Multiple Sclerosis" in the title. The exclusion criteria were: articles that did not focus exclusively on Multiple Sclerosis, and articles that addressed quality of life but not the impacts of the disease. The search resulted in 23 studies, of which 19 remained after the exclusion of duplicates and unrelated articles. **RESULTS** The results indicate that quality of life is impaired by physical symptoms (fatigue, pain, spasticity), as well as cognitive and emotional symptoms (depression, anxiety). Stigma, both public and internalized, was widely reported and associated with social isolation, unemployment, and poorer mental health. The occupational impact of MS includes absenteeism, loss of income, early retirement, and workplace discrimination. Interpersonal relationships and social participation are also affected, especially among men, who tend to perceive less social support. In children and adolescents, the disease compromises academic performance and social integration. Social support networks, positive coping strategies, and multidisciplinary care have shown protective effects on patients' well-being. **CONCLUSION:** Multiple Sclerosis affects several dimensions of patients' lives, going beyond clinical symptoms. Quality of life is reduced by physical, cognitive, and emotional limitations, while stigma and psychological disorders contribute to isolation and social vulnerability. In the occupational context, unemployment, income loss, and discrimination are frequent, leading to economic impact. Social and family relationships are also compromised, particularly in the absence of support, especially among men. Therefore, an interdisciplinary care approach that includes psychosocial support and strategies aimed at inclusion and quality of life becomes essential.

71. EPIDEMIOLOGICAL PROFILE OF PNEUMONIA IN MARANHÃO POST-PANDEMIC: AN ANALYSIS FROM 2020 TO 2025

Elaine Sousa Benício¹, Allana Regina Franco de Sá Ribeiro¹, Warley Charles Nogueira Chagas², Leonardo Gabriel Franco de Jesus¹, and Luís Ângelo Macedo Santiago¹.

¹ Federal University of Maranhão

² Dom bosco university center (UNDB)

⁵ Federal University of Maranhão

INTRODUCTION: Pneumonia is an acute inflammation of the lungs, characterized by infection of the alveoli and the presence of exudate, which compromises oxygenation. It can be caused by various etiological agents, such as viruses, bacteria, and fungi. Given its impact on public health, studying the epidemiological profile of the

disease is essential to guide prevention strategies, early diagnosis, and effective clinical management. **OBJECTIVE:** To analyze the epidemiological profile of hospitalizations due to pneumonia in Maranhão during the years 2020 to 2025. **METHODS:** This is a descriptive epidemiological study using data obtained from the Hospital Information System of the Unified Health System (SIH/SUS) in the period 2020–2025 in Maranhão. Therefore, the variables sex, race, and age group were adopted, with ICD-10: Pneumonia. It is important to emphasize that it is not possible to distinguish between cases of complicated community-acquired pneumonia (CAP) and hospital-acquired pneumonia based on the data available in the SIH/SUS and the ICD-10 classification. **RESULTS:** During the analyzed period, a total of 104,667 hospitalizations were observed, with an annual average of 20,933.4 hospitalizations in Maranhão, peaking in 2022. Regarding the distribution by sex, it revealed a male predominance representing approximately 51.7% (N = 54,117) of hospitalizations, while women corresponded to 48.29% (N = 50,550). Regarding the race/color variable, the records showed a predominance of the brown population, with 76.16% (N = 79,722) of cases and with a lower prevalence in indigenous people with 0.62% (N = 652) of cases. Regarding age group, the highest frequency of hospitalizations was recorded in the group aged 1 to 4 years, representing 22.7% (N=23,761), followed by the group aged 80 years and over, with approximately 13.78% (N=14,427) and with a lower prevalence of 15 to 19 years, with 2.28% (N=2,391). **CONCLUSION:** The study showed that the epidemiological profile of pneumonia hospitalizations in Maranhão between 2020 and 2025 is predominantly among men (51.7%), among the mixed-race population (76.16%), and more frequently among those at the extremes of age. The results found in these age groups are consistent with global epidemiological patterns, indicating the greater vulnerability of these groups to complications. The predominant incidence in the mixed-race population may reflect social inequities and limited access to healthcare. These findings reinforce the need for targeted and equitable public policies focused on prevention, early diagnosis, and access to appropriate treatment for the most vulnerable populations in Maranhão.

72. USE OF BETA-BLOCKERS IN HEART FAILURE WITH REDUCED EJECTION FRACTION: CURRENT EVIDENCE

Kívia Mayana Santos de Oliveira¹, Thais Vieira de Moraes Sousa¹, Rodrigo Mizaél Lara Chacon¹, Giovanna Maria Leite Pearce¹, Claudio Diego Sousa Ramos¹, and Carla Maria Lisboa Fernandes¹

¹ Federal University of Maranhão

INTRODUCTION: Heart failure with reduced ejection fraction (HFrEF) is a cardiac disease characterized by the left ventricle's inability to pump blood efficiently, causing hemodynamic overload and progressive symptoms. In this context, beta-blockers have established themselves as a therapeutic pillar for this condition, promoting a proven reduction in morbidity and mortality and functional improvement. **OBJECTIVE:** Analyze the effectiveness of beta-blockers in the treatment of heart failure with reduced ejection fraction. **METHODS:** This is an integrative literature review, conducted between 2021 and 2025, using the PubMed, Scopus, and SciELO databases. The descriptors "beta-blockers", "heart failure", and "reduced ejection fraction" were used, combined with the Boolean operator "AND". Full-text articles available in English or Portuguese, published between 2021 and 2025, that addressed the clinical efficacy of BBs in HFrEF were included. Previous reviews,

duplicate studies, or articles and publications outside the thematic scope were excluded. After screening, 6 articles comprised the final sample. **RESULTS:** Beta-blockers show significant efficacy in reducing mortality and hospitalizations in patients with HFrEF and sinus rhythm (SR), regardless of age or sex. However, their benefit is less evident in elderly patients with mild symptoms. In individuals with HFrEF associated with atrial fibrillation (AF) or acute heart failure (AHF), the results vary, offering a neutral or potentially adverse effect, except in young patients with HFrEF and AF and low risk of complications, in whom there was survival improvement. The introduction of BBs must occur gradually in stable patients who have not yet used the medication, always in accordance with clinical guidelines. Despite their proven efficacy, BBs are still underutilized in patients with HFrEF, often due to unfounded fears of hypotension or bradycardia. Continuing medical education and deeper knowledge about doses and choice of the specific agent are fundamental to expanding the safe and effective use of these drugs. **CONCLUSION:** The use of beta-blockers continues to be the main pharmacological path in the treatment of patients with heart failure with reduced ejection fraction, having demonstrated an excellent prognosis.

73. POLYCYSTIC OVARY SYNDROME AND METABOLIC ALTERATIONS

Ana Clara Carvalho Barroso¹, Lucas Clovisan Camargo Santos¹, Maria Clara Santos Araujo¹, Samyra Elouf dos Santos Simão¹ and Jorge Antônio Meireles Teixeira¹.

¹ Federal University of Maranhão

INTRODUCTION: Polycystic ovary syndrome (PCOS) is a common endocrinopathy in women of reproductive age, affecting about 6–19% of this population. Its etiology, although not yet fully elucidated, involves genetic predisposition and environmental factors. Moreover, it is a multifactorial disease characterized by hyperandrogenic and reproductive alterations, which can lead to infertility. Metabolic changes, such as insulin resistance, increased risk of obesity, and chronic inflammation, are also commonly associated with the condition. This highlights the need to analyze this association, as these alterations have serious impacts on the patient's quality of life and the progression of the disease. **OBJECTIVE:** To investigate the repercussions arising from the association between polycystic ovary syndrome and the resulting metabolic alterations in women of reproductive age. **METHODS:** This is an integrative review conducted through searches in the PubMed and SciELO databases, using descriptors such as "Polycystic Ovary Syndrome" and "Metabolic Syndrome." Articles published between 2005 and 2025 addressing metabolic alterations in women of reproductive age were included. After screening by title, abstract, and full-text reading, five studies were selected for the final analysis. **RESULTS:** The analyzed literature indicates that polycystic ovary syndrome (PCOS) is strongly associated with metabolic alterations such as insulin resistance, dyslipidemia, central obesity, and low-grade chronic inflammation, even in women with a normal BMI. Insulin resistance is considered one of the main mechanisms of the syndrome, promoting increased androgen levels and intensifying manifestations such as acne, hirsutism, and anovulation. Inflammatory markers such as CRP, TNF- α , and IL-6 are also elevated, suggesting a persistent systemic inflammatory state. Moreover, visceral adipose tissue contributes to metabolic dysfunction by altering adipokine secretion, perpetuating the cycle of insulin resistance, hyperandrogenism, and inflammation. **CONCLUSION:** PCOS is a multifactorial condition with significant metabolic repercussions, such as insulin resistance, dyslipidemia, and

chronic inflammation. Recognizing it as a systemic syndrome is essential for early interventions aimed at reducing complications and improving patients' quality of life.

74. MORTALITY DUE TO LEPROSY IN MARANHÃO: CRITICAL ANALYSIS OF THE INCREASE AND DIFFERENCES BY SEX

Lenora Cristina Freitas Aragão¹, Isa Gabrielle Ferreira Rêgo¹, Marcela Ferreira Santos¹, Ana Gabriela da Silva Nascimento¹, Ana Vitória Dias Gonçalves and Pedro Agnel Dias Miranda Neto¹.

¹ Faculty of Health Sciences Pitágoras of Codo.

INTRODUCTION: Leprosy is a chronic infection caused by *Mycobacterium leprae*, which primarily affects the skin and peripheral nerves and can cause physical disabilities and significant psychosocial impact when diagnosed late. Analyzing leprosy deaths is essential to assess the effectiveness of control programs and identify gaps in care that contribute to the disease's progression to fatal outcomes. In Maranhão, a state that continues to experience high rates of the disease, leprosy-associated mortality reveals inequalities in access to healthcare and reinforces the urgency of more effective interventions. **OBJECTIVE:** To investigate the evolution of leprosy mortality in the state of Maranhão, through a comparative analysis of the periods 2012-2014 and 2022-2024. **METHODS:** Observational study of deaths in the population of Maranhão between 2012 and 2014 and between 2022 and 2024. Data collected and analyzed were from the Informatics Department of the Unified Health System (SUS), according to the following variables: deaths, ICD-10, sex, municipalities, and period. For statistical analysis, we used the risk rate per 100,000 inhabitants and the chi-square test. Due to the use of secondary data in the public domain, ethics committee approval was not required. **RESULTS:** Leprosy deaths in Maranhão experienced an alarming 444.44% increase, rising from 9 to 49 deaths between the study periods. Female deaths saw a 600% increase in deaths, surpassing the 366.66% increase among males. Death rates per 100,000 population were calculated, demonstrating an increase for both sexes. The increase in females, from 0.09 to 0.60, is particularly worrying, indicating a specific increase in mortality risk for women, even though the male rate is still numerically higher. It is important to note that, although the percentage increase was greater for females, the male mortality rate (0.83 per 100,000 population in 2022-2024) remains higher than the female mortality rate (0.60 per 100,000 population in the same period). The χ^2 did not detect a statistically significant difference in the occurrence of deaths by sex in relation to the population in any of the periods (p -value > 0.05), which can be attributed to the low absolute number of deaths. **CONCLUSION:** The data indicate a substantial increase in deaths, especially among women, suggesting inequality in care and late diagnosis, which require urgent attention. Female mortality increased at a higher rate than male mortality, indicating potential specific barriers to accessing diagnosis and treatment. Factors such as stigma, household burden, and reduced financial autonomy can delay seeking healthcare. The lack of a statistically significant difference between the sexes, according to the χ^2 test, may reflect limitations due to the low absolute numbers. Thus, the lack of significance does not rule out the existence of the problem, reinforcing the need for larger studies and qualitative approaches to understand this trend. Strengthening epidemiological surveillance and implementing public policies aimed at active case finding and treatment adherence, with a focus on gender vulnerabilities, are recommended.

75. TO IRON AND FOLIC ACID SUPPLEMENTATION AMONG ADOLESCENT PREGNANT WOMEN IN PRIMARY CARE UNITS OF SÃO LUÍS - MA

Letícia Carvalho Castro¹, Linda Simão Marques¹, Júlia Lima Abreu¹, Lara Aleksia Soares Ferreira¹, Klauss Tasso Sousa de Lira Filho¹, and Adriana Sousa Regor¹.

¹ Ceuma University.

INTRODUCTION: Adolescence is a transitional stage between childhood and adulthood, marked by significant physical, psychological, and social changes. This stage, as defined by the World Health Organization (WHO), encompasses individuals aged 10 to 19 years. Along with bodily changes, curiosity about sexuality is a topic of discussion among adolescents, since the subject is taboo at home. Teenage pregnancy is related not only to education or income, but also to family abandonment. During pregnancy, prenatal care is extremely important for both the mother and the baby in order to reduce complications, in addition to providing guidance on folic acid and ferrous sulfate supplementation. **OBJECTIVE:** To evaluate adherence to ferrous sulfate and folic acid supplementation by pregnant adolescents in basic health units in São Luís, Maranhão. **METHODS:** This is a cross-sectional study conducted with pregnant adolescents in their second and third trimesters of pregnancy, monitored at primary health care centers. Participation was voluntary, upon signing the Free and Informed Consent Form, approved by the Ethics Committee under opinion No. 5.794.986. Pregnant women with cognitive or neurological impairments or any condition that prevented them from adequately completing the questionnaire were excluded from the study. The data were organized and tabulated in Microsoft Excel® 2019 and subsequently analyzed statistically in Stata® version 16.0 software, using descriptive analyses. **RESULTS:** Eighteen pregnant adolescents were evaluated. Among them, 50% ($n=9$) lived with their partner and had completed high school. The majority, 82.35% ($n=14$), were in their first pregnancy, and only 11.12% ($n=2$) had planned their pregnancy. Regarding supplementation, 88.88% ($n=16$) reported regular use of ferrous sulfate and 77.77% ($n=14$) of folic acid. **CONCLUSION:** The results show good adherence to ferrous sulfate and folic acid supplementation among the adolescent pregnant women evaluated, demonstrating a satisfactory understanding of the importance of these health measures for maternal and child health. These findings highlight the fundamental role of prenatal care and health education initiatives, especially in the context of primary care, as effective strategies for promoting adequate care during teenage pregnancy.

76. USE OF PROCALCITONIN AS AN EARLY BIOMARKER OF SEPSIS: A SYSTEMATIC REVIEW

Isabela Marinho da Cunha¹, João Pedro Belaglovis Castelo Branco¹, João Victor Cunha Silva¹, Lucas Gabriel Feitosa da Exaltação¹, João Guilherme Furtado Sobrinho¹, Maria Clara Nunes da Silva¹, and Santiago Cirilo Nogueira Servin¹.

¹ Federal University of Maranhão

INTRODUCTION: Sepsis is a clinical emergency that triggers a dysregulated systemic inflammatory response to an infection, usually bacterial, with potential progression to organ dysfunction and death. Early diagnosis remains challenging, delaying appropriate treatment. In this context, procalcitonin (PCT), a precursor peptide of calcitonin primarily produced in the thyroid, emerges as a promising biomarker. Its levels rise in response to severe bacterial infections, potentially

contributing to faster and more accurate identification of sepsis, thereby improving clinical outcomes and prognosis. **OBJECTIVE:** To analyze the use of procalcitonin as a biomarker for the early detection and monitoring of sepsis. **METHODS:** This is a systematic review conducted according to the PRISMA protocol, guided by the question: "What is the role of procalcitonin as an early biomarker in the diagnosis and monitoring of sepsis?" The search was performed in PubMed, LILACS, and Cochrane databases using the descriptors "Procalcitonin," "Sepsis," and "Biomarker," combined with the Boolean operator "AND," covering the period from 2020 to 2025. A total of 74 articles were identified, of which 11 were excluded due to duplication and 34 for not meeting inclusion criteria, resulting in 17 studies selected. **RESULTS:** The results demonstrate that PCT is a sensitive and specific marker for bacterial infections, with detectable elevation within 3 to 6 hours after the onset of infection, peaking within 24 hours. This rapid response favors early diagnosis of sepsis and is superior to other markers such as C-reactive protein. In several studies, cutoff values between 0.25 and 0.5 ng/mL were associated with sepsis and indicated the need for immediate intervention. Additionally, PCT proved useful for therapy monitoring, as progressive declines in levels correlated with clinical improvement and safe antibiotic discontinuation, whereas persistently elevated levels indicated a worse prognosis. Compared to other biomarkers, PCT demonstrated higher specificity, particularly in critically ill patients. **CONCLUSION:** PCT represents a valuable tool in clinical practice, with the potential to enhance early recognition and management of sepsis. However, its use should always be contextualized with patient clinical evaluation and laboratory data, promoting safer and more individualized decision-making.

77. REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION APPLIED TO THE TREATMENT OF FIBROMYALGIA

Yasmin Maciel Costa¹, Lunna Figueiredo Leal¹, Leticia Pinheiro Nogueira¹, Manuela Régia Ferreira Martins¹, Henara A. Lima Assunção Monteiro¹, Joyce Rodrigues de Carvalho¹ and José Osvaldo Barbosa Neto¹.

¹ State University of Maranhão

INTRODUCTION: Fibromyalgia is a chronic disease characterized by widespread pain and psychological distress that is challenging to assess because it depends on self-reporting. Currently, pharmacotherapy and physical therapy are used as interventions, but they have limited effectiveness in eradicating symptoms. Therefore, repetitive transcranial magnetic stimulation (rTMS) has emerged as a promising approach for the treatment of nociceptive pain. **OBJECTIVE:** Evaluate the clinical outcomes associated with the use of transcranial magnetic stimulation when applied to the treatment of fibromyalgia. **METHODS:** Integrative literature review, in which 15 articles published between 2020 and 2025 were filtered from the PubMed database, two of which were excluded due to irrelevance to the topic. The search used the descriptors "transcranial magnetic stimulation" and "fibromyalgia" under the Boolean operator "AND.". **RESULTS:** Based on these methods, it was observed that rTMS when applied to the primary motor cortex (M1) promotes significant reduction in pain and fatigue. Furthermore, improvements in emotional and physical stability were identified when applying high-frequency rTMS to patients. When applied to the right dorsolateral prefrontal cortex (RDLPFC), rTMS demonstrated a decrease in pain intensity, as well as improvements in cognitive function, sleep health, and consequently, quality of life. However, when rTMS was applied at high frequency to the RDLPFC in a clinical trial, no significant clinical

differences were demonstrated in relation to the placebo group. When compared to transcranial direct current stimulation (tDCS), both applied to the rDFC, rTMS was found to be superior in reducing pain, with a longer-lasting analgesic effect for up to six months. In addition, deep transcranial magnetic stimulation (dTMS) was indicated as an effective way to reduce the sensory and affective dimensions of pain. **CONCLUSION:** Repetitive Transcranial Magnetic Stimulation has proven to be a useful tool for managing the physical and psychological pain of patients with fibromyalgia, with sustainable long-term clinical effects after intervention. However, there is a need for more standardized studies with greater methodological rigor on rTMS to reinforce its effectiveness.

78. EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS DUE TO SYSTEMIC CONNECTIVE TISSUE DISEASES IN SÃO LUÍS-MA BETWEEN 2020 AND 2025

Juliana de Oliveira Lima¹, Bianka Albuquerque de Sousa¹, Larissa da Silva Teixeira¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, and Douglas Soares da Costa¹.

¹ Bacabal Pitágoras College

INTRODUCTION: Systemic Connective Tissue Diseases (SCTDs) constitute a group of autoimmune, inflammatory, and chronic illnesses, including Systemic Lupus Erythematosus, Systemic Sclerosis, and Sjögren's Syndrome. These pathologies present with multisystemic manifestations, affecting the skin, joints, and internal organs, with a significant impact on the functionality and quality of life of affected individuals. Considering the possibility of severe complications, early diagnosis and adequate therapeutic intervention are fundamental for reducing morbidity and preventing hospitalizations. **OBJECTIVE:** The objective of this study was to describe the epidemiological profile of hospital admissions due to systemic connective tissue diseases in São Luís-MA, between January 2020 and May 2025. **METHODS:** This is an epidemiological, descriptive, retrospective, and quantitative study, based on data from the SUS Hospital Information System (SIH/SUS), provided by the SUS Department of Informatics (DATASUS). Variables such as the number of hospitalizations per year, sex, age group, race/color, hospital establishment, type of care, and occurrence of deaths were analyzed using the Microsoft Excel 2019 platform. **RESULTS:** In the analyzed period, 1208 hospitalizations were recorded, with 2024 being the year with the highest incidence, 35.6% (n=430), and 2019 the year with the lowest occurrence, 1% (n=12). Regarding sex, there was a predominance of hospitalizations among females, 77.3% (n=934), and the 20 to 29 age group, 19.7% (n=238), followed by the 30 to 39 and 40 to 49 age groups, 17.3% (n=209 each), which accounted for the largest contingent. In the race/color variable, a higher prevalence was observed among parda (brown/mixed-race) individuals, 74.2% (n=897). The UFMA University Hospital concentrated the largest number of cases, 64.3% (n=777), followed by the Hospital Carlos Macieira, 23.6% (n=285), and Santa Casa, 6% (n=73). Regarding the type of care, there were 77% (n=930) elective and 23% (n=278) emergency admissions. In total, 16 deaths were recorded in the analyzed period. **CONCLUSION:** Therefore, hospitalizations due to systemic connective tissue diseases were more prevalent among young, parda women, with a concentration in the year 2024, of an elective nature, and at the UFMA University Hospital. These findings reinforce the relevance of epidemiological surveillance and outpatient care, given that timely diagnosis and adequate treatment can reduce complications, promote a better prognosis, and prevent severe outcomes, such as hospitalizations and deaths.

79. GLP-1 RECEPTOR AGONISTS IN TYPE 2 DIABETES MELLITUS: CARDIOVASCULAR, RENAL, AND ENDOCRINE BENEFITS

Tainá Silva dos Santos¹, Laysa Cardoso da Silva¹, Maria Lívia Oliveira da Silva¹, Mariana Dourado Santiago¹, Sabrine Soares Costa¹, Sueli de Costa Souza¹

¹ Federal University of Maranhão

INTRODUCTION: GLP-1 receptor agonists have been incorporated into the treatment of type 2 diabetes due to their glycemic effect and additional benefits. Evidence indicates a reduction in cardiovascular risk and preservation of renal function, especially in higher-risk patients. Understanding these impacts is essential to guide appropriate therapeutic approaches. **OBJECTIVE:** To analyze the cardiovascular, renal, and endocrine effects associated with the use of GLP-1 receptor agonists in patients with type 2 diabetes mellitus. **METHODS:** This is an integrative literature review, with the research question guided by the PICo strategy: "What are the cardiovascular, renal, and endocrine benefits associated with the use of GLP-1 receptor agonists in patients with type 2 diabetes?" The search was conducted by two independent researchers in the PubMed, NLM, and SciELO databases, using the Health Science Descriptors (DeCS) "GLP-1 Receptor Agonists," "Type 2 Diabetes Mellitus," "Cardiovascular Diseases," "Kidney Function," and "Endocrine System," with the Boolean operators AND and OR. For the search and selection of articles, Page et al.'s (2021) Flowchart was used, following the guidelines of the PRISMA protocol. Studies in English, published between 2020 and 2024, and available in full were included. Duplicates, reviews, non-original studies, and those not included in the research question were excluded. **RESULTS:** Thirty-eight articles were found in the initial search, of which 10 were selected for inclusion in this review. Among them, two reported endocrine effects, with a reduction in glycated hemoglobin, weight loss, and improved lipid profile, with an emphasis on semaglutide. Four others demonstrated cardiovascular benefits, such as a lower incidence of major adverse cardiac events (MACE), mortality, heart attack, and stroke, especially in high-risk individuals. Finally, four addressed renal outcomes, with reduced progression of chronic disease and reduced albuminuria. These findings reinforce the clinical role of GLP-1 RAs as multifunctional agents in the management of type 2 diabetes mellitus. **CONCLUSION:** GLP-1 receptor agonists promote consistent benefits in glycemic control and in the reduction of cardiovascular and renal events in patients with type 2 diabetes. These effects, especially in high-risk situations, reinforce the role of these drugs as promising strategies in clinical management.

80. FACTORS ASSOCIATED WITH THE INCIDENCE OF PRESSURE INJURIES IN HOSPITALIZED PATIENTS: AN INTEGRATIVE LITERATURE REVIEW

Gabriel Costa Garcia¹, Sophie Marie Machado Aragão², Gabriel Lima Alves³, Cecília Giovanna dos Santos Sarmento, Julia Marreiros Silva¹, Laura Batista Cruz¹, and Ludmilla Santos Silva de Mesquita¹.

¹ State University of the Tocantina Region of Maranhão

² Federal University of Maranhão

³ Federal University of Lavras

INTRODUCTION: Pressure injuries (PIs) are defined as tissue damage in a specific area caused by prolonged compression between a surface and a bony prominence. This process usually occurs in bedridden, immobilized, or critically ill patients and is an indicator of the quality of care provided in health services. Therefore, understanding the factors associated with the occurrence of PI in a

hospital setting is essential to support strategies for prevention and improvement of care quality. **OBJECTIVE:** To analyze the main factors associated with the incidence of PI during hospitalization. **METHODS:** This is an integrative literature review, conducted in the PubMed and SciELO databases. The inclusion criteria were publications between 2016 and 2024, in Portuguese and English. The exclusion criteria involved duplicate articles and those not directly related to the topic. The search strategy used the descriptors: "Pressure Injury" and "Hospital Admission.". **RESULTS:** The analysis of the selected studies allowed the organization of risk factors associated with PI into three main categories: clinical, care-related, and related to the use of medical devices. Among the clinical factors, advanced age, compromised nutritional status, and the presence of physiological changes stood out. In the care setting, staff overload, especially among nurses, prolonged hospitalization, and delays in performing procedures. Regarding medical devices, the use of oxygen masks, catheters, probes, and orotracheal tubes were identified as predisposing factors. **CONCLUSION:** The occurrence of PI in hospitalized patients is strongly related to clinical, organizational, and technological factors, which interact and increase the risk in vulnerable healthcare contexts. Thus, understanding these factors is important for establishing preventive measures, strengthening care protocols, promoting patient safety, and ensuring the quality of healthcare provided in hospital settings.

81. OBSTRUCTIVE SLEEP APNEA AND HYPERTENSION: A SILENT THREAT TO CARDIOVASCULAR HEALTH

Gabriel Alves Lima¹, Cecília Giovanna dos Santos Sarmento², Gabriel Costa Garcia², Julia Marreiros Silva², Sophie Marie Machado Aragão³, Lara Vitória Araújo de Oliveira² and Phelipe Austriaco Teixeira².

¹ Federal University of Lavras.

² State University of the Tocantina Region of Maranhão.

³ Federal University of Maranhão

INTRODUCTION: Sleep is a fundamental biological process for physiological recovery and maintenance of homeostasis. Sleep disorders, such as Obstructive Sleep Apnea (OSA), are characterized by repeated interruptions in breathing during sleep, with breathing pauses of at least 10 seconds. These pauses result in intermittent hypoxia, sympathetic activation, and oxidative stress, factors that contribute to the pathophysiology of cardiovascular diseases, such as Systemic Arterial Hypertension (SAH). **OBJECTIVE:** To analyze the relationship between Obstructive Sleep Apnea and Systemic Arterial Hypertension, considering the pathophysiology and clinical implications of this association. **METHODS:** This is an integrative literature review. Searches were conducted between 2015 and 2024 in the PubMed, SciELO, and Google Scholar databases, using the descriptors "Obstructive Sleep Apnea", "Systemic Arterial Hypertension", "Intermittent Hypoxia" and "Cardiovascular Diseases" combined with Boolean operators. Systematic reviews and meta-analyses addressing the relationship between OSA and SAH were included. The exclusion criteria involved duplicate articles and those not directly related to the topic. In total, 13 articles were analyzed. **RESULTS:** Studies show a strong relationship between Obstructive Sleep Apnea and Hypertension. Repeated episodes of hypoxia and micro-awakenings increase the release of catecholamines, contributing to increased blood pressure. OSA also promotes an increase in inflammatory cytokines, causing systemic inflammation, endothelial dysfunction, and arterial stiffness. Data from 2022 indicate that up to 50% of patients with moderate to severe OSA have

hypertension, even after adjusting for obesity, age, and gender. It has also been found that treatment with devices for sleep-disordered breathing can reduce systolic blood pressure by up to 4.4 mmHg in compliant patients. **CONCLUSION:** This study shows that OSA is an important causal factor in systemic hypertension, mainly through the activation of the sympathetic nervous system, inflammation, and endothelial dysfunction induced by intermittent hypoxia. The high prevalence of hypertension among patients with OSA reinforces the need for early diagnosis and appropriate management, aiming to reduce blood pressure and improve cardiovascular prognosis.

82. INFORMED CONSENT FORM IN THE MEDICAL RECORD: LEGAL AND ETHICAL IMPORTANCE IN CLINICAL PRACTICE

Andressa de Castro Moraes¹, Jorge Matheus Gomes Cunha¹, and Sueli de Souza Costa¹.

¹ Federal University of Maranhão

INTRODUCTION: The medical record is essential in clinical practice, serving as a means of communication among healthcare professionals and as legal evidence. Included within it, the Informed Consent Form (ICF) ensures that the patient understands the procedures to which they will be subjected, safeguarding their rights and providing legal protection to the physician, especially considering the growing judicialization of healthcare. **OBJECTIVE** To analyze the ethical and legal importance of the Informed Consent Form (ICF) in the medical record and in clinical practice. **METHODS** This is an integrative literature review guided by the following research question: "What is the ethical and legal importance of recording the Informed Consent Form in the medical record and in clinical practice?" The search followed the PRISMA protocol and was conducted in the CAPES, ACM, and DOAJ databases, using the descriptors "medical records," "informed consent," and "ethics," connected by AND. Articles published between 2020 and 2024, in Portuguese or English, available in full text, and addressing the relationship between informed consent, medical records, and legal responsibility were included. Duplicate articles and literature reviews were excluded. **RESULTS** In the initial search, 11 publications were identified (3 in DOAJ, 6 in CAPES, and 2 in ACM). After applying the inclusion criteria, 3 studies composed the final sample — 1 in Portuguese and 2 in English. The publication years were 2020, 2021, and 2023 (n=1, respectively). The analysis revealed that recording the Informed Consent Form (ICF) in the medical record is essential to ensure patient autonomy and transparency in care, strengthening the doctor-patient relationship. Furthermore, the ICF serves as legal protection for both parties, proving informed consent amid the growing judicialization of healthcare. Even in challenging contexts, such as the COVID-19 pandemic, the ICF remained necessary, with adaptations to ensure ethical and legal validity. Proper documentation reinforces compliance with legal standards, ensuring legal security and respect for patient rights. **CONCLUSION** It is evident that the Informed Consent Form (ICF) is fundamental in clinical practice, both ethically and legally, as it goes beyond a formal and ethical requirement by ensuring patient autonomy, transparency in care, and legal protection for all parties involved. Thus, current clinical practice requires that the ICF be included in the medical record and that professionals recognize its importance for providing ethical and safe care.

83. EPIDEMIOLOGICAL PROFILE OF TUBERCULOSIS IN MARANHÃO BETWEEN 2015 AND 2024

Daniela Ferreira Santos¹, Marcela Ferreira Santos¹, Ingrid Rocha Nascimento¹, and Bárbara Laurice Araújo Verçosa²

¹ Faculty of Health Sciences Pitágoras

² Federal University of Piauí

INTRODUCTION: Tuberculosis is characterized as an infectious disease caused by the bacterium *Mycobacterium tuberculosis*, representing a serious public health problem due to its extensive territorial dimension, the emergence of cases resistant to multiple drugs and situations of coinfection. Its transmission is directly associated with social determinants, such as income, lifestyle, precarious housing, and the abuse of alcohol and other drugs, common in highly vulnerable regions, such as Maranhão (MA). **OBJECTIVE:** To analyze the epidemiological profile of tuberculosis in the state of Maranhão between 2015 and 2024. **METHODS:** This is a descriptive quantitative epidemiological study, the data for which were collected in July 2025 using data available in the Notifiable Diseases Information System (SINAN/DATASUS). The study covers the state of Maranhão, covering the period 2015 to 2024, with a focus on tuberculosis cases. The following variables were analyzed: year of notification, age group, sex, laboratory confirmation, sputum culture, and rapid tuberculosis test. **RESULTS:** In Maranhão, between 2015 and 2024, 28,288 cases of tuberculosis were confirmed. Over this period, a progressive increase in the number of notifications was observed, indicating a growing trend of the disease in the state. The year 2024 had the highest number of confirmed cases, totaling (n=3,619; 12.79%) of notifications. The analysis revealed a higher prevalence in males (n=19,138; 67.65%) and a higher concentration of cases in the 20-39 age group (n=12,046; 42.58%), demonstrating a significant impact of tuberculosis in young adults. Regarding the form of diagnostic confirmation, most cases were confirmed through laboratory methods (n=17,571; 62.11%). Despite this, sputum culture was performed in a small proportion of patients, confirming (n=2,258; 7.98%) cases, while (n=24,091; 85.16%) patients did not undergo this test. The rapid tuberculosis test detected sensitivity to rifampicin in (n=5,117; 18.09%) patients, but (n=19,500; 68.93%) did not undergo the test, which indicates possible gaps in access to essential complementary tests. **CONCLUSION:** The results obtained demonstrate the importance of tuberculosis as a public health problem in Maranhão, as well as the need to adopt preventive measures by directing educational efforts and control actions towards the most vulnerable population groups.

84. ANALYSIS OF THE EPIDEMIOLOGICAL PROFILE OF DEATHS FROM STROKE (CVA) IN MARANHÃO FROM 2019 TO 2023

Beatriz de Matos Moura¹, Kivia Mayana Santos de Oliveira¹, Thais Vieira de Moraes Sousa¹, Mikaelly Cunha Lima¹, and Carla Maria Lisboa Fernandes²

¹ Federal University of Maranhão

INTRODUCTION: Stroke is a severe clinical condition characterized by the sudden interruption of cerebral blood flow, which may occur due to ischemia (blood vessel obstruction) or hemorrhage (vascular rupture with blood extravasation). Both forms result in potentially irreversible neurological damage and present high lethality rates, especially when associated with risk factors such as hypertension, diabetes mellitus, smoking, physical inactivity, cardiovascular diseases, and stress. The association between comorbidities, aging, and inequalities in access to care intensifies clinical conditions and

high mortality rates in Maranhão. **OBJECTIVE:** To investigate stroke-related mortality rates in Maranhão between 2019 and 2023, emphasizing the epidemiological profile associated with its occurrence and evolution during the analyzed period. **METHODS:** This is a descriptive epidemiological study based on data collected from DATASUS, complemented by a literature search on the SciELO database. The following descriptors were used: "stroke", "mortality", "epidemiology", and "complications". A total of seven articles were identified, of which five met the inclusion criteria after excluding duplicates, paid publications, literature reviews, and studies unrelated to the thematic focus. **RESULTS:** Data analysis revealed a high incidence of stroke-related deaths in Maranhão, with the highest numbers recorded in 2020 (2,038 cases) and 2019 (1,858 cases). Regarding age group, most deaths occurred among individuals aged 80 years or older (4,051 deaths), highlighting the direct relationship between aging and increased vulnerability to cerebrovascular events. A significant increase in lethality was also observed among individuals over 50 years, especially those aged 60–69 years (1,433 cases) and 70–79 years (2,657 cases). Concerning race/color, deaths were concentrated among mixed-race individuals (6,361 cases), followed by white (1,576) and black individuals (1,245). With respect to sex, men (5,163 deaths) had higher mortality rates than women (4,216 deaths), a pattern that remained consistent throughout the analyzed period. **CONCLUSION:** The high stroke mortality rates in Maranhão between 2019 and 2023, peaking in 2020, reflect the vulnerability of individuals aged 80 and older, especially those affected by comorbidities and cerebrovascular events. The majority of these individuals are male and of mixed race, which highlights potential sociodemographic inequalities and reinforces the importance of prevention strategies and specialized care for higher-risk groups.

85. RELATIONSHIP BETWEEN THE NOTIFICATION OF ACQUIRED SYPHILIS, TESTING AND HDI IN THE NORTHEAST STATES IN 2024

Patrik Lorrán Moraes de Sousa¹, Rebeca Rocha Pinheiro, Wendel Sousa Lima¹, Edivaldo Coelho Madeira de Sousa Júnior¹, Leticia Gabriele Rebonatto Vieira¹ and Luz Marina Gomez Gomez¹.

¹ Federal University of Maranhão

INTRODUCTION: Syphilis is a sexually transmitted infection of high importance in public health. Its growing notification in Brazil has been attributed both to the real increase in cases and to the expansion of testing. In the Northeast, a historically unequal region, the Municipal Human Development Index (HDI-M) is often cited as a factor associated with the prevalence of the disease. However, the real influence of HDI on epidemiological surveillance is still uncertain. **OBJECTIVE:** Analyze whether the HDI-M is associated with the prevalence of syphilis acquired in the Northeast states in 2024 and verify whether testing coverage can be a determining factor for the observed notification patterns. **METHODS:** Observational study of quantitative approach, with secondary data from SIA/SUS (rapid tests for syphilis), SINAN (reported cases) and UNDP (HDI-M) for the year 2024. The positivity ratio (cases per 1,000 tests performed) were calculated and statistical tests such as the Shapiro-Wilk test were applied to verify data normality and the Pearson correlation test to evaluate the linear association between the number of tests and the number of reported cases, with a significance level of 5% ($p < 0.05$) in the R software. **RESULTS:** 865,710 rapid tests and 4,901 reported cases of syphilis were analyzed in the nine states of the Northeast. A positive and statistically significant correlation was observed between

the number of tests and the reported cases ($r = 0.73$; $p = 0.024$), indicating that the highest testing is associated with the highest notification. States with low testing showed higher positive ratios, suggesting underreporting: Rio Grande do Norte (15.8 cases/1,000 tests), Sergipe (13.8/1,000) and Bahia (11.0/1,000). Maranhão and Paraíba, despite performing large quantities of tests (146,189 and 80,545, respectively), had low positivity ratios (3.4 and 3.9/1,000). The analysis between HDI-M and syphilis prevalence did not reveal a statistically significant correlation, suggesting that human development, in isolation, does not explain the variation in notification. **CONCLUSION:** The HDI-M, in isolation, is not associated with the prevalence of syphilis in the Northeast in 2024. However, the alternative hypothesis that underreporting results from insufficient testing in states with a smaller structure has been statistically proven. This reinforces the importance of strengthening epidemiological surveillance and expanding access to testing as fundamental strategies for coping with syphilis.

86. EARLY INTERVENTION VERSUS CONSERVATIVE TREATMENT IN PATIENTS WITH SEVERE ASYMPTOMATIC AORTIC STENOSIS

Wilker Frainkyli Silva Mendonça¹, Paulo Vítor de Aguiar Ribeiro¹, Marcos de Jesus Câmara Ferreira¹, and Vinícius José da Silva Nina¹.

¹ Federal University of Maranhão.

INTRODUCTION: Early intervention (EI), whether through conventional surgery or transcatheter aortic valve replacement (TAVR), in patients with asymptomatic severe aortic stenosis (AS), has been the subject of intense debate. Randomized clinical trials (RCTs) published between 2024 and 2025 have strengthened the need for updated literature reviews to provide current scientific evidence and optimize medical decision-making. **OBJECTIVE:** This study aims to compare the clinical outcomes of early aortic valve intervention with conservative management in asymptomatic severe AS. **METHODS:** A literature review was conducted in July 2025 using the descriptors "Aortic Valve Stenosis," "asymptomatic," "Early Surgical Intervention," "conservative management," "Mortality," and "Heart Failure," combined with the Boolean operator "AND" in the advanced search of the PubMed database. Seven studies were identified after applying the inclusion criteria: published within the last two years, in English, free full text, containing the descriptors in the title/abstract, and adequately addressing the topic. **RESULTS:** EI in patients with asymptomatic severe AS did not demonstrate a reduction in all-cause mortality or unplanned hospitalizations related to AS in the EVOLVED trial (HR 0.79; $P = 0.44$). However, there was a lower rate of AS-related hospitalizations (6% vs. 17%) and New York Heart Association functional class II–IV symptoms at 12 months (19.7% vs. 37.9%) in the EI group. Additional RCTs, such as AVATAR and RECOVERY, suggested improved survival with early surgery, although their small sample sizes and differences in inclusion criteria limit generalizability. Other studies also indicated a reduction in heart failure hospitalizations and combined events, even without an effect on overall mortality. Elevated cardiac biomarkers were associated with higher event risk, but the relative benefit of early TAVR remained consistent regardless of biomarker levels. **CONCLUSION:** EI in asymptomatic severe AS shows benefits in clinical outcomes such as hospitalizations and functional symptoms, especially in higher-risk groups identified by advanced imaging or biomarkers. However, the lack of impact on all-cause mortality and the limited available data highlight the need for more robust clinical trials and updated guidelines to guide clinical decision-making.

87. EPIDEMIOLOGICAL OVERVIEW OF LEPROSY IN MARANHÃO BETWEEN 2015 AND 2024Daniela Ferreira Santos¹, Marcela Ferreira Santos¹, and Otávia Maria Abreu Pinto Bezerra².¹ Faculty of Health Sciences Pitágoras - Codó² Uninovafapi University Center

INTRODUCTION: Leprosy is a chronic, transmissible disease with a high potential for disability, primarily affecting the nerves and dermis. It is caused by *Mycobacterium leprae*, with the airways being the primary means of transmission. The magnitude of the disease, combined with its historical neglect, makes it a persistent public health problem. **OBJECTIVE:** to analyze the epidemiological panorama of leprosy in Maranhão between 2015 and 2024. **METHODS:** This is a cross-sectional, retrospective study with a quantitative approach, which used data from the Notifiable Diseases Information System (Sinan), obtained from TabNet Datasus, referring to leprosy cases reported in Maranhão between 2015 and 2024. The following variables were designated for the study: year of notification, education, sex, race, age group, skin lesion, clinical form. **RESULTS:** In Maranhão, between 2015 and 2024, 35,880 cases of leprosy were registered. A downward trend was observed over the years, although the numbers remain relevant for public health. 2015 had the highest number of diagnoses, with 4,481 cases, corresponding to 12.49% of the total registered in the period. The epidemiological analysis highlighted the predominance of males, with (n = 21,556; 60.08%) cases, and of mixed race, totaling (n = 24,443; 68.12%). In terms of age group, the highest number of cases was registered among individuals aged 40 to 49 years (n = 6,171; 17.20%). Regarding education, there was a higher prevalence among people with incomplete elementary education (1st to 4th grade) (n=7,485; 20.86%). Furthermore, it was observed that the majority of cases presented more than 5 skin lesions, corresponding to (n=13,449; 37.48%), and the dimorphic clinical form was the most frequent, representing (n=19,982; 55.69%). **CONCLUSION:** The results demonstrate the relevance of leprosy as a serious public health problem in Maranhão, highlighting the need to maintain and reinforce preventive measures, including educational efforts and control actions aimed at the most vulnerable population groups.

88. PROFILE OF BRAZILIAN PUBLICATIONS AND COLLABORATIONS IN CARDIOVASCULAR SURGERYPaulo Victor De Aguiar Ribeiro¹, Wilker Frainkyli Silva Mendonça¹, Marcos De Jesus Câmara Ferreira¹ and Vinicius Jose Da Silva Nina¹.¹Federal University of Maranhão

INTRODUCTION: Cardiovascular surgery in Brazil and worldwide has experienced significant growth in the context of technological innovations. This progress is grounded in various types of studies and collaboration among institutions aimed at reducing morbidity and mortality resulting from cardiovascular conditions. Scientific analysis is used to identify research development across different contexts. **OBJECTIVE:** Thus, the objective is to perform a scientometric analysis of the profile of Brazilian publications in cardiac surgery within the global landscape. **METHODS:** For the article search, the Scopus (Elsevier) database was used. The five journals with the highest CiteScore in the field of cardiovascular surgery were analyzed. The following variables were assessed: the methodology used, the total number of publications with interstate and international collaborations, and the percentage of each country partnering with Brazilian teams. **RESULTS:** A total of 325 articles were identified, and

it was possible to determine the methodological approaches of 300 studies, including 48 observational studies (16%), 46 letters to the editor, 43 case or image reports, 32 experimental studies with animals (10.6%), 31 technical notes (10.3%), 30 review articles (10%), 27 randomized clinical trials (9%), 26 case series (8.6%), and 17 using other methodologies (5.7%). Among the analyzed studies, 265 had Brazilian lead authors, distributed by state as follows: São Paulo with 174 papers (65.6%), Minas Gerais, Pernambuco, and Paraná with 17 each (6.42%), Rio Grande do Sul with 14 (5.28%), and other states totaling 26 studies (9.8%). Regarding international collaborations, the United States participated in 44 studies (16.4%), Germany in 24 (8.9%), Canada in 22 (8.2%), the United Kingdom in 20 (7.4%), and another 157 (58.8%) studies involved countries with fewer than 20 collaborations each. **CONCLUSION:** The most frequent methodologies among Brazilian publications were observational studies, letters to the editor, and case/image reports, with most research originating from southeastern states—particularly São Paulo—highlighting the inequality in scientific production among regions. Furthermore, there is notable international collaboration between Brazil and other countries, especially the United States and Germany. These findings demonstrate a solid scientific output in Brazil, suggesting that strengthening regional and international collaborations could further enhance the impact of Brazilian research on the global stage.

89. EDUCATIONAL APPROACHES IN CARDIOPULMONARY RESUSCITATION FOR NON-PROFESSIONALS: A SYSTEMATIC REVIEWMaria Beatriz Soares Vieira¹, João Victor Cunha Silva¹, João Pedro Belaglovis Castelo Branco¹, Davi Nunes Marques, Isabela Marinho da Cunha¹ and Santiago Servin¹.¹ Federal University of Maranhão

INTRODUCTION: Out-of-hospital cardiac arrest (OHCA) is a global public health emergency. In this context, teaching cardiopulmonary resuscitation (CPR) to laypeople has been widely promoted through European initiatives, as it can double a victim's chance of survival. This underscores the importance of effective educational strategies targeted at this audience. **OBJECTIVES:** To analyze different teaching approaches for cardiopulmonary resuscitation aimed at laypeople, in order to compare their methods and impacts. **METHODOLOGY:** This is a systematic review conducted according to the PRISMA Protocol, guided by the research question: "What is the impact of CPR education for lay individuals?" A total of 59 studies were retrieved from PubMed, BVS, and Cochrane databases, using the descriptors "Cardiopulmonary resuscitation," "Educational health," and "Simulation training," combined with the Boolean operator "AND," covering the years 2020 to 2025. After screening, 7 studies were selected for meeting the guiding question of this review. **RESULTS:** Among the 59 studies found, 7 were selected for addressing the review's research question. Based on the analysis, it was observed that CPR training provided at regular intervals of about four months proved more effective for skill retention compared to annual training sessions. Additionally, training laypeople—especially teachers—was beneficial in one study, showing that they can act as knowledge multipliers in resuscitation if continuous support and training are provided. Furthermore, five other studies demonstrated that the use of technologies such as augmented reality and mobile applications improves technical performance and engagement, although it may delay the initiation of CPR. **CONCLUSION:** CPR education for laypeople requires dynamic, accessible, and sustainable approaches, as resuscitation training must be clearly conveyed to the population.

Periodic refreshers and short-term training models have shown greater effectiveness than occasional courses. Moreover, including multipliers such as teachers expands the reach of educational initiatives. The use of technology should also be encouraged, provided it is simplified to avoid compromising the promptness of real-life responses. Therefore, CPR education for non-professionals is highly recommended and should be supported by public policies to expand knowledge and increase the potential to save lives.

90. THERAPEUTIC INTERVENTIONS IN THE QUALITY OF LIFE OF POST-MASTECTOMY WOMEN BEYOND BREAST RECONSTRUCTION

Filipe Rainan Costa Silva¹, Lara Luiza Pitombeira Rocha¹, and Diego Trabulsi Lima¹.

¹ Federal University of Maranhão.

INTRODUCTION: Mastectomy is one of the most commonly used surgeries to combat breast cancer. However, this procedure, especially when combined with axillary surgeries, can cause upper limb dysfunction, such as reduced mobility and strength, as well as pain and restrictions on daily activities. This negatively impacts the quality of life of women who have undergone mastectomies and necessitates the development of therapeutic alternatives for mental and physical compensation for this group. **OBJECTIVE:** This study aims to discuss the impact of post-surgical therapeutic interventions on the quality of life of women who have undergone mastectomy, beyond breast reconstruction. **METHODS:** This is an integrative literature review conducted using the PubMed database and using the descriptors ("Quality of Life" OR "Indicators of Quality of Life") AND ("Mastectomy"), limiting original articles from the period 2020 to 2025, in English or Portuguese. Of a total of 113 articles selected, 16 were included and 97 were excluded because they did not address the topic. **RESULTS:** Studies have shown positive effects of physical exercise on post-mastectomy quality of life, both for the entire body and for the upper limbs, which experienced regained mobility, strength, and function. Furthermore, the use of surgical interventions, such as compression of surgical scars for aesthetic and functional improvement of the upper limbs, was observed, as well as cryoneurolysis of the intercostobrachial nerve for pain control in patients with Postmastectomy Pain Syndrome. Monitoring individual patient complaints, psychological encouragement to increase confidence, and participation in collective therapy groups were influential factors in maintaining good mental health. Furthermore, less conventional approaches were also beneficial, such as music therapy, which helped control anxiety, and mirror therapy and clinical hypnosis, which promoted pain reduction in daily activities, improved sleep, and improved quality of life. **CONCLUSION:** The results show that interventions such as physical exercise, surgical scar stimulation, psychological counseling, and even unconventional approaches like music therapy and hypnosis are beneficial for improving the quality of life of women who have undergone mastectomies, due to their physical and mental benefits. Finally, the importance of researching the effectiveness of new therapies in the comprehensive care of these patients is evident.

91. PROFILE OF HOSPITALIZATIONS AND MORTALITY DUE TO MALIGNANT SKIN NEOPLASMS IN MARANHÃO, BRAZIL, BETWEEN 2018 AND 2024

Luca Ribeiro Santos Araújo¹, Judith Carneiro Maciel¹ and Wellyson da Cunha Araújo Firmo¹

¹ State University of Maranhão Tocantine Region

INTRODUCTION: Malignant skin neoplasms are the most common cancers in Brazil, accounting for approximately 30% of reported cases. They are divided into melanoma, which is more aggressive, and non-melanoma, including basal cell and squamous cell carcinomas. Excessive sun exposure, low photoprotection, fair skin, and family history are relevant risk factors. In Maranhão, the hot climate, "sun and sea" tourism, and intensive rural labor increase population vulnerability. Prevention involves photoprotection, early diagnosis, and active primary healthcare, particularly through campaigns such as "Orange December." **OBJECTIVE:** To analyze the profile of hospitalizations and the mortality rate due to malignant skin neoplasms in the state of Maranhão. **METHODS:** This is a retrospective, quantitative epidemiological study based on data from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS), accessed via the TABNET platform of the Department of Informatics of SUS (DATASUS). Hospitalizations and deaths due to malignant skin neoplasms in Maranhão between 2018 and 2024 were analyzed according to age, sex, and race/color. **RESULTS:** Between 2018 and 2024, 407 hospitalizations due to malignant skin neoplasms were recorded in the state, with just over half (204 cases) occurring in São Luís, the state capital. The overall mortality rate during this period was 13.02%, with notable annual variations: the highest rate occurred in 2021 (22.92%), and the lowest in 2024 (6.74%). The age group 60–69 years had the highest number of hospitalizations (87 cases), whereas the 30–39-year age group showed the highest proportional mortality rate (18.75%). Gender distribution was balanced, with a slight male predominance (211 men and 196 women). Regarding race/color, most hospitalizations occurred among mixed-race individuals (pardo) (284), followed by white individuals (42), reflecting the state's ethnic-demographic composition. **CONCLUSION:** Malignant skin neoplasms continue to have a significant impact in Maranhão, particularly among older adults. Fluctuations in mortality rates highlight ongoing challenges in prevention and care. The proportionally high mortality among younger adults emphasizes the need for educational interventions targeting different age groups. These findings reinforce the urgency of effective public policies and active primary healthcare in early detection, with campaigns such as "Orange December" playing a key role.

92. CHARACTER OF PNEUMONIA CARE IN MARANHÃO: AN ANALYSIS OF THE YEARS 2020 TO 2025

Allana Regina Franco de Sá Ribeiro¹, Yan Chagas Lopes¹, Giovanna Luiza da Silva Araujo¹ and Sueli de Souza Costa¹.

¹Federal University of Maranhão.

INTRODUCTION: Pneumonia is a lower respiratory tract infection characterized as an acute inflammatory process caused by various etiological agents, such as viruses, bacteria, and fungi. Therefore, analyzing the different ways patients access healthcare services is fundamental to understanding patient flow, identifying patterns of medical consultation, and ensuring the appropriate management of the disease by the responsible healthcare professionals. In this regard, care can be provided on either an elective or urgent basis, depending on the severity of the clinical presentation. In this context, elective care refers to scheduled services provided in outpatient settings, where there is sufficient time for investigation, diagnosis, and the initiation of treatment. On the other hand, urgent care involves situations where the clinical condition demands immediate intervention in a hospital environment. Consequently, understanding the predominant type of care sought by patients with pneumonia is necessary, given the importance of preparing professionals to guide

care according to this profile and offer better patient management. **OBJECTIVE:** To analyze the nature of care for pneumonia hospitalizations in Maranhão from 2020 to 2025. **METHODS:** This is a descriptive, retrospective, and quantitative epidemiological study using data obtained from the Hospital Information System of the Unified Health System (SIH/SUS) from 2020 to 2025 in Maranhão. The variables used were the nature of care (elective or urgent) for hospitalizations classified under ICD-10: Pneumonia. **RESULTS:** During the analyzed period, a total of 105,808 hospital admissions were observed, with an annual average of 21,161.6 admissions in Maranhão, of which 92.37% were urgent and 7.62% were elective. Regarding the annual nature of care, it was observed that in 2020, 95.59% were urgent care admissions and 4.40% were elective; in 2021, 94.25% were urgent and 5.74% were elective; in 2022, 91.71% were urgent and 8.28% were elective; in 2023, 92.25% were urgent and 7.74% were elective; in 2024, 91.53% were urgent and 8.46% were elective; and in 2025, 90.48% were urgent and 9.51% were elective. **CONCLUSION:** The study evidenced that the predominant nature of care for pneumonia hospitalizations in Maranhão is urgent. These findings highlight the need for training the medical community on the correct diagnosis and treatment of this pathology within the context of urgent and emergency medicine.

93. EPIDEMIOLOGICAL ANALYSIS OF SELF-INJURY IN MARANHÃO: 2020-2024

Mateus Ayrtton Barboza de Melo¹, João Pedro Belaglovis Castelo Branco¹, Maria Stefany Costa Soares¹ and Caio José Carvalho Filho¹.

¹Federal University of Maranhão

INTRODUCTION: Self-harm is physical harm intentionally inflicted by an individual, reflecting intense psychological distress and often concomitant with suicidal ideation. Studies show that this behavior is associated with a variety of psychological pathologies and supports their diagnosis. **OBJECTIVE:** This study aims to analyze the epidemiological profile of notifications of self-inflicted injuries in Maranhão from January 1, 2020 to December 31, 2024. **METHODS:** This is a time-series analysis of data from the Notifiable Diseases Information System (SINAN), available on the platform of the Department of Information Technology of the Unified Health System (DATASUS). The variables used in the study were sex, age group (in years), race/ethnicity, education level, place of occurrence, and health region. **RESULTS:** During the analyzed period, 24,157 reports of interpersonal or self-inflicted violence were recorded, of which 5,907 (24.5%) referred to self-harm. Furthermore, there was an increase in annual reports from 844 occurrences in 2020 to 1,621 in 2024. The age groups 15–19 years (35.8%) and 20–29 years (31.5%) had the highest percentages of self-inflicted injuries. Furthermore, reports predominated among individuals of mixed race (73%) and with incomplete elementary education. Of the recorded reports, 33.6% occurred at school and 31.7% at home. Concomitantly, the temporal trend analysis revealed a monthly increase in the incidence of self-inflicted injuries within the studied period (p-value: 0.0146; 95% CI, [0.42 ; 3.92]). **CONCLUSION:** The impact of self-harm is profound and has been increasing over the period analyzed. Therefore, it is important to regularly monitor data and consider new health policies for this practice, which is often associated with psychological pathologies.

94. ORAL TISSUE ALTERATIONS AND OTOLARYNGOLOGIC RISKS ASSOCIATED WITH PROLONGED ELECTRONIC CIGARETTE USE

Amanda Cristina Moura Brandão¹, Thais Klerine Muniz Sousa¹, and Manoel Vinícius Moura De Sousa¹.

¹ Federal University of Maranhão

INTRODUCTION: Electronic cigarettes (ECs), commonly known as vapes, are devices that release a mixture of nicotine, flavoring agents, and bases such as glycerol and propylene glycol, producing an aerosol. Because they do not generate smoke, ECs are often considered safer alternatives. However, studies indicate that prolonged EC use promotes microbial dysbiosis, creating an anaerobic environment in the oral cavity that increases susceptibility to bacterial and viral infections and hinders the elimination of these pathogens. **OBJECTIVE:** This study aimed to investigate the effects of prolonged electronic cigarette use on the oral microbiota, mucosa, and epithelial tissue, as well as its possible otolaryngologic implications. **METHODS:** This study is an integrative review based on the PRISMA Protocol. The descriptors "electronic cigarette," "vape," "oral mucosa," and "epithelial tissue" were used in the PubMed and BVS databases. Primary articles published in the last five years, in Portuguese or English, open-access, and addressing microbiological alterations in the oral cavity associated with prolonged electronic cigarette use, were included. Duplicate studies or those focusing exclusively on traditional cigarettes or treating the topics separately were excluded. **RESULTS:** A total of 39 studies were identified; 10 were excluded based on the criteria, and 10 were included in this review. The studies report that electronic cigarettes, popular among young people, contain toxic compounds such as aldehydes, nitrosamines, heavy metals, and free radicals that accumulate in oral tissues and fluids, causing direct epithelial damage. These effects include cellular alterations, oxidative stress, DNA strand breaks, and induction of epithelial-mesenchymal transition processes that promote chronic inflammation and increase the potential for precancerous lesions and oral cancer. Both cinnamaldehyde and nicotine present in the vapor alter the vasomotor activity of the oral and pharyngeal mucosa. Chronic exposure can modify mucosal sensitivity in these regions. Additionally, nicotine may cause swelling and inflammation of the minor salivary glands, contributing to hyposalivation, a condition that increases the risk of oral fungal infections, commonly observed among electronic cigarette users. These alterations compromise oral cavity homeostasis and highlight the tissue risks associated with vape use. **CONCLUSION:** Electronic cigarette use causes various tissue damages in the oral cavity. The substances contained in ECs alter the integrity of the oral epithelium and increase the risk of precancerous lesions. Thus, vaping represents a significant risk factor for oral health and deserves clinical, scientific, and preventive attention in light of the growing use of the device, especially among young individuals.

95. HOSPITAL MORBIDITY AND MORTALITY DUE TO CEREBRAL INFARCTION IN BRAZIL FROM 2015 TO 2024

Marcello De Freitas Costa Rodrigues Filho¹; Osean Maximilian Câmara Pereira¹; Samuel Victor Soares De Carvalho¹; Consuelo Penha Castro Marques¹.

¹ Universidade Federal do Maranhão

INTRODUCTION: The second leading cause of death in the world is stroke, and approximately 10% of those with this disease will develop cerebral infarction, progressing to malignancy in most cases. Cerebral infarction (CI) is a neurological condition with a high mortality rate, in

addition to being disabling, which is why it is classified as a serious disease. **OBJECTIVE:** The objective of this work was to investigate hospital admissions for cerebral infarction in Brazil, from 2015 to 2024. **METHODS:** This is an epidemiological, exploratory, quantitative-descriptive, time-series study, covering the years 2015 to 2024. Data were extracted from the Hospital Information System (SIH/SUS) - TABNET/DATASUS, Ministry of Health, Brazil. The variables analyzed include the number of hospitalizations, hospital deaths, age group, sex, color/race and geographic region. **RESULTS:** There were $n = 219,037$ hospitalizations for HF in Brazil in the decade studied, with a continuous increasing trend, involving some peaks and discrete oscillations. The year 2015 ($n = 17,998$) had the lowest number and 2024 ($n = 25,356$) had the highest number of hospitalizations for pathology. The region with the most cases was the Southeast ($n = 100,366$), followed by the South ($n = 54,571$). The age groups most affected were: 50 to 59 years ($n = 36,318$), 60 to 69 years old ($n = 56,380$), 70 to 79 years old ($n = 55,032$), and 80 and over ($n = 39,076$) hospitalizations. The predominant sex was male ($n = 11,4910$) hospitalizations. The white race ($n = 84,431$) was the most affected, followed by the brown race ($n = 75,096$). The total amount spent on these hospitalizations was R\$ 454,339,098.82 and the average value was R\$ 2,074.26. There were $n = 32,765$ deaths from HF, corresponding to a mortality rate of $n = 14.96$, from HF in Brazil. **CONCLUSION:** The IC presents a high number of hospitalizations, with an increasing trend over the period, which generates an alert for the control of these cases. Recognizing the epidemiological profile favors the screening of the disease among the risk group described as men, in the age group over 50 years old, and mainly 60-79 years old, especially in the Southeast and South, and due to the pathophysiology, those who suffered a stroke.

96. HOSPITAL MORBIDITY AND MORTALITY OF MULTIPLE SCLEROSIS IN BRAZIL FROM 2015 TO 2024

Marcello De Freitas Costa Rodrigues Filho¹, Osean Maximilian Câmara Pereira¹, Samuel Victor Soares De Carvalho¹, and Consuelo Penha Castro Marques¹.

¹ Universidade Federal do Maranhão

INTRODUCTION: Multiple Sclerosis (MS) is characterized by the generation of the myelin sheaths (membranes that surround the fibers of the Central Nervous System), which ensures the speed of electrical impulses of neurotransmission with precision, at various points. Damage to this sheath allows its regeneration without any impairment of function, however certain inflammations can trigger irreversible damage and loss of standard function. As it is a chronic disease and incapacitates the sufferer, Multiple Sclerosis requires adaptation from the patient and their life cycle. **OBJECTIVE:** The objective of this study was to investigate the epidemiological profile of hospital morbidity and mortality due to MS in Brazil from 2015 to 2024. **METHODS:** This is an epidemiological, quantitative, descriptive study with secondary data from the SUS Hospital Information System (SIH-SUS) - TABNET/DATASUS, Ministry of Health, for the period (2015-2024). Variables studied: hospitalizations, hospital deaths, age group, sex, color/race, region, average value, total value spent and mortality rate. The data were exported to EXCEL, tabulated and expressed in absolute numbers and frequencies. **RESULTS:** The number of hospitalizations due to MS was 50,304 cases in the 10 years of the study. It presents an increasing trend, surpassing the presumed trend in 2024. In 2015, there were 2,078 and in 2024, there were 8,375 hospitalizations. The highest number of cases was in the Southeast ($n=35,934$), followed by the South ($n=5,629$). The age group most

affected was 30 to 39 years old ($n=14,509$) hospitalizations. There was a high predominance of females (70%) and males (30%). The white race predominated with 2,7364 and brown ($n=15,286$) hospitalizations. Total amount spent ($n=R\$27,475,434.29$); average amount ($n=R\$546.19$). There were $n=318$ hospital deaths from MS, with a national mortality rate ($n=0.63$), although the North region has the highest mortality rate ($n=3.08$). **CONCLUSION:** Multiple sclerosis is a disease with serious consequences for its sufferers and their support network, due to disabling injuries and difficulties in daily activities. The number of deaths reflects the need for improvement in its management, demonstrating several fluctuations that may reflect the absence of protocols or difficulties in implementing health measures that are based on preventive results for such hospitalizations. These data can support measures to encourage the prevention of hospitalizations, as well as the promotion of health in the face of MS, improving its treatment and increasingly minimizing its deaths.

97. PREVALENCE AND PROFILE OF CESAREAN DELIVERIES IN BACABAL: AN ANALYSIS OF SECONDARY DATA FROM 2018 TO 2023

Sarah de Sousa Ibiapina¹, and Wesliany Everton Duarte¹

¹ Pitágoras College

INTRODUCTION: In Brazil, between 2000 and 2021, the rate of cesarean deliveries ranged from 37.2% to 57%, far exceeding the 15% limit recommended by the World Health Organization (WHO). In the municipality of Bacabal, there is a high prevalence of cesarean sections, influenced by cultural factors such as fear of vaginal delivery and maternal preferences. **OBJECTIVE:** To conduct a survey of the profile of deliveries of live births in Bacabal - MA, analyzing the mode of delivery and the impacts of cesarean section on child health. **METHODS:** This is a cross-sectional epidemiological study conducted in Bacabal-MA, using secondary data from DATASUS for the period 2018-2023. The analyzed variables included ethnic group, prenatal care, maternal age, mode of delivery, type of pregnancy, and congenital anomalies. Data were organized in electronic spreadsheets and analyzed using SPSS 21.0, applying frequency distributions and the chi-square test ($p < 0.05$). **RESULTS:** The study revealed an exceptionally high prevalence of cesarean deliveries in Bacabal-MA between 2018 and 2023, reaching 75.8%, far exceeding the OMS recommendation. Cesarean sections predominated across all age groups and ethnic categories, especially among mixed-race (79.6%) and white women (82.5%), while Black women had a higher proportion of vaginal births. There was a significant association between delivery type and number of prenatal consultations ($p < 0.001$): 83.5% of women with seven or more consultations underwent cesarean delivery. Other variables (age, type of pregnancy, and congenital anomalies) also showed a predominance of cesarean section, indicating medicalization of childbirth and inequalities in obstetric care. Child-health impacts reported were respiratory disorders, including allergic rhinitis, asthma, and transient tachypnea. **CONCLUSION:** It is observed that a high rate of cesarean deliveries occurred, especially among young mixed-race women. Black women showed the second highest proportion of vaginal births. Indigenous women exhibited a high prevalence of cesarean sections, diverging from other regional contexts. The need for further studies on the impacts of cesarean delivery on child health and the social determinants influencing the choice of delivery method is highlighted. Campaigns promoting vaginal delivery are recommended.

98. RESTRICTIVE VERSUS LIBERAL FLUID STRATEGY IN ADULTS WITH SEPTIC SHOCK: A SYSTEMATIC REVIEW

Luis Fernando Nogueira Furtado¹, Thalita Linda Alves Candeira¹, Ana Beatriz Figueiredo Portilho dos Santos¹, Isabela Pinheiro Souza¹, João Victor Cunha Silva¹, João Marco Miranda Nogueira de Oliveira¹, and Yasmin Sousa Bastos²

¹ Federal University of Maranhão.

² University Center of Maranhão.

INTRODUCTION: Septic shock is a high-mortality condition characterized by circulatory dysfunction and tissue hypoperfusion, whose initial management is centered on fluid resuscitation. The optimization of fluid therapy after the initial phase is crucial, as both hypovolemia and fluid overload are associated with poorer clinical outcomes. In this context, the debate over adopting a restrictive or liberal fluid strategy has become a central focus in modern intensive care. **OBJECTIVE:** This study aims to synthesize evidence from major clinical trials comparing the efficacy and safety of restrictive versus liberal fluid strategies in adult patients with septic shock. **METHODS:** This is a systematic review. The search was conducted in July 2025 in the PubMed, Cochrane Library, and Embase databases, using the descriptors (Septic Shock[MeSH Terms] OR Sepsis[MeSH Terms]) AND (Fluid Therapy[MeSH Terms]) AND (restrictive OR liberal) AND (Randomized Controlled Trial[Publication Type]). We included randomized clinical trials published in the last 5 years, with no language restriction, that directly compare fluid strategies in adult patients with septic shock. **RESULTS:** The analysis of 13 randomized clinical trials, involving over 16,500 patients, found no statistically significant difference in the primary outcome of 90-day mortality. In the CLASSIC trial, mortality was 42.3% in the restrictive group versus 42.1% in the liberal group. Analysis of the aggregated data confirmed this equivalence, with a Relative Risk (RR) of 0.99 (95% Confidence Interval [CI]: 0.93 to 1.05). The restrictive approach was safe, with no increase in the incidence of serious adverse events such as ischemic events or the need for renal replacement therapy. It also achieved its goal, resulting in a cumulative fluid balance nearly 2 liters lower than the liberal group over 5 days. **CONCLUSION:** The search for the optimal fluid strategy in septic shock has been a major debate. The results, based on the strongest available evidence, demonstrate that neither the restrictive nor the liberal strategy offers a survival advantage. However, by confirming the safety of the restrictive approach, this study reinforces that the clinical priority should be the prevention of fluid overload, allowing clinicians to individualize management without fear of causing harm from hypoperfusion.

99. POLYPHARMACY IN THE ELDERLY AND THE RISK OF DRUG INTERACTIONS

Eliosmar da Cruz Filho¹, Juliana Fontes Gondin Silva¹, Caroline Moreira de Souza¹, Samyra Elouf dos Santos Simão¹ and Jorge Antônio Meireles Teixeira¹

¹ Federal University of Maranhão

INTRODUCTION: The risks associated with polypharmacy among the elderly are recognized as a global health problem, with a growing prevalence in countries like Brazil. Polypharmacy, defined as the combination of more than five medications, can initially have positive effects on disease control and treatment. However, drug interactions and the potential for adverse effects can reduce vitality and quality of life in older adults, in addition to favoring dangerous and potentially fatal clinical outcomes. Therefore, understanding the risks associated with polypharmacy is essential for developing a safer and more

effective therapeutic approach for the elderly. **OBJECTIVE:** Analyze the risks associated with polypharmacy in the elderly and the risk of deleterious drug interactions. **METHODS:** The methodology consisted of a systematic literature review of PubMed, LILACS, and Google Scholar databases, using health descriptors related to polypharmacy, older adults, and drug interactions. Boolean operators and filters for freely available full-text articles published between 2015 and 2025 were applied. The selection prioritized original studies and reviews directly related to the risks and factors associated with polypharmacy in older adults. **RESULTS:** The prevalence of polypharmacy in the elderly (≥ 65 years) varies from 30% to 60% in studies, being associated with a higher risk of adverse reactions, hospitalizations, and poorer quality of life. The risk of drug interactions was directly proportional to the number of medications being used, ranging from 13% with two medications to 82% with seven or more. Furthermore, the most significant interactions involved common combinations such as antidiabetics and beta-blockers or nonsteroidal anti-inflammatory drugs (NSAIDs) and diuretics, leading to negative clinical impacts, the main ones being hypotension, kidney damage, and gastrointestinal bleeding. **CONCLUSION:** Therefore, it can be concluded that polypharmacy in the elderly represents a significant public health challenge, being directly associated with an increase in adverse events, drug interactions, and a reduced quality of life. Therefore, early identification and continuous monitoring of treatments are essential to minimize risks. In this sense, multidisciplinary strategies and periodic prescription review are essential to promote the rational use of medications in this population.

100. RELATIONSHIP BETWEEN THE CLINICAL PRESENTATION OF HEART FAILURE AND THE NUMBER OF HOSPITAL ADMISSIONS DUE TO DECOMPENSATION

Daniele Beatriz Almeida da Silva¹, Eliosmar da Cruz Filho¹, Sara Raquel Ribeiro Pires¹, Pedro Massagli Yamada¹, Alexia Carolina Freire Silva De Almeida¹, and José Albuquerque de Figueiredo Neto¹

¹ Federal University of Maranhão

INTRODUCTION: Heart failure (HF) is a clinical syndrome characterized by the inability of the heart to pump blood effectively to meet tissue metabolic demands. It is one of the leading causes of hospitalization among adults and the elderly and is associated with high mortality and readmission rates. The clinical presentation of HF is heterogeneous and may directly reflect the severity of the condition and possible prognoses, such as hospital admissions, requiring further investigation. **OBJECTIVE:** Analyze the relationship between clinical presentation and prognosis of hospitalization for decompensated HF. **METHODS:** This is an observational, retrospective, historical cohort study conducted with patients treated at a specialized service in Maranhão between 2021 and 2024. The data were tabulated and organized in Excel, and statistical analysis was performed using R Studio software (version 4.4.1). Spearman's correlation, Kruskal-Wallis, and Mann-Whitney tests were used for inferences, adopting a significance level of 5%. The research was approved by the Ethics Committee (CAAE: 25756919.9.2004.5086). **RESULTS:** A total of 233 patients were analyzed. Regarding the epidemiological profile, there was a predominance of males (68.5%) and brown-skinned individuals (61.87%), with a median age of 59 years, ranging from 17 to 90 years. Furthermore, regarding the association between clinical signs of HF and the number of hospitalizations, a statistically significant difference was identified

between the number of hospitalizations and the stage of HF ($p = 0.0066$), which is reinforced by a low-magnitude positive correlation ($\rho = 0.18$), indicating that as the stage of HF worsens, there is a tendency for an increase in the number of hospitalizations. A statistically significant difference was also observed between the number of hospitalizations and the ethnicity of the patients ($p = 0.033$). **CONCLUSION:** Therefore, based on the study, it can be observed that males and individuals of mixed race are predominant among patients with HF. In addition, there is a significant association between the higher number of hospitalizations and the worsening of the disease stage and ethnicity. These findings point to the need to target actions at the most vulnerable social groups and to develop health actions that prevent the worsening of the disease, aiming at early diagnosis, reduction of hospitalizations, and improvement of clinical outcomes.

101. OPHTHALMOLOGICAL SIGNS AS A SCREENING TOOL FOR THE DIAGNOSIS OF SYSTEMIC DISEASES: AN INTEGRATIVE REVIEW

Warley Charles Nogueira Chagas¹, Allana Regina Franco de Sá Ribeiro², Elaine Souza Benicio³, Leonardo Gabriel Franco de Jesus⁴ and Luis Ângelo Macedo Santiago⁵.

¹ Dom Bosco University Center

² Federal University of Maranhão.

INTRODUCTION: Systemic diseases are those that affect multiple organs and tissues of the body, rather than being limited to a specific area. The eyes have rich vascularization and innervation, which can be observed noninvasively through certain examinations, such as ophthalmoscopy. Therefore, many systemic diseases have ocular repercussions, and early diagnosis is essential for effective treatment and the prevention of complications. A thorough ophthalmological evaluation is a highly important diagnostic tool in general clinical practice, allowing for the detection of pathological changes both locally and as a screening method for other systemic diseases. Thus, this review is essential to analyze and understand the events related to the topic. **OBJECTIVE:** To highlight, through medical literature, the importance of ocular semiology in early diagnosis. **METHODS:** This is a na integrative literature review. The searches were conducted in the PubMed and SciELO databases between June and July 2025, using the following controlled descriptors: "ocular manifestations," "diabetic retinopathy," and "early diagnosis." The terms were combined with the Boolean operators AND and OR to broaden and refine the results, and articles published between 2019 and 2025 were analyzed. **RESULTS:** Several systemic diseases present ocular manifestations that can serve as screening tools for early diagnosis. For instance, in systemic lupus erythematosus, retinal vasculitis and microangiopathy detectable through fundus examination are frequent findings. Another example is Behçet's disease, in which posterior uveitis and retinal vasculitis may precede cutaneous and oral lesions. In spondyloarthritis and rheumatoid arthritis, anterior uveitis is a common finding and may indicate systemic inflammatory activity. Infectious diseases such as syphilis and tuberculosis also present ophthalmological manifestations, including chorioretinitis and vasculitis, making ocular examination essential for the early differential diagnosis of these conditions. **CONCLUSION:** Based on this, ocular evaluation can reveal early clinical signs such as uveitis, vasculitis, and optic neuropathies that precede classic systemic symptoms. Therefore, recognizing these changes allows for faster diagnosis and early implementation of treatment, reducing the risk of irreversible visual sequelae and improving the patient's overall prognosis.

102. EPIDEMIOLOGICAL PROFILE OF GESTATIONAL TOXOPLASMOSIS AMONG INDIGENOUS PREGNANT WOMEN IN THE NORTHEAST REGION OF BRAZIL (2019–2025)

Bianka Albuquerque De Sousa¹; Larissa Da Silva Teixeira; Juliana De Oliveira Lima¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, Maria Karolina Ferreira Da Silva², Antonia Mauryane Lopes¹.

¹ Pitagoras College of Bacabal

² Florence University Center

INTRODUCTION: Gestational toxoplasmosis is caused by the protozoan *Toxoplasma gondii*, whose primary infection during pregnancy can result in serious consequences for the fetus, such as neurological and visual impairments and, in severe cases, fetal death. In Brazil, the high prevalence of the parasite combined with inequalities in access to adequate prenatal care makes this infection a major public health problem. Thus, Indigenous pregnant women often face greater vulnerability due to the combination of racial discrimination, gender inequality, and socioeconomic precariousness. **OBJECTIVE:** This study aims to analyze the epidemiological profile of gestational toxoplasmosis among indigenous pregnant women reported in the Northeast Region. **METHODS:** This is an epidemiological, descriptive, and retrospective study using secondary data extracted from the Notifiable Diseases Information System (SINAN), from the Datasus platform, between 2019 and 2025. Confirmed cases of gestational toxoplasmosis in self-identified Indigenous pregnant women living in the Northeast region were included. The variables analyzed were: year and region of notification, age group, and education level. **RESULTS:** A total of 138 cases of gestational toxoplasmosis were reported in Indigenous pregnant women in the Northeast region. There was a progressive increase in notifications, peaking in 2024 ($n=41$ cases). Most pregnant women were aged 20 to 39 years ($n=98$), followed by 15 to 19 years ($n=32$). Regarding education, complete high school ($n=35$) stood out, followed by incomplete high school ($n=19$) and complete elementary school ($n=12$). Only 1 pregnant woman had incomplete higher education, and 6 had completed higher education. Regarding the distribution by state, the highest concentration of cases occurred in Bahia ($n=39$) and Pernambuco ($n=36$). Most cases occurred in 2023 ($n=34$) and 2024 ($n=41$), suggesting possible improvements in surveillance and notification. **CONCLUSION:** The data show an increase in reports of gestational toxoplasmosis among Indigenous pregnant women in the Northeast, especially among young women with up to high school education. The findings reinforce the need for public policies aimed at expanding early diagnosis, prenatal care, and prevention strategies in Indigenous communities. Ensuring equal access to information, diagnosis, and healthcare, especially during prenatal care, is essential to mitigate the impacts of toxoplasmosis, protecting pregnant women and newborns in different contexts.

103. CESAREAN SECTION AND EARLY NEONATAL MORTALITY: AN EPIDEMIOLOGICAL ANALYSIS IN THE NORTHEASTERN STATES OF BRAZIL

Larissa Da Silva Teixeira¹, Bianka Albuquerque De Sousa, Juliana De Oliveira Lima¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, Maria Karolina Ferreira Da Silva², Antonia Mauryane Lopes¹.

¹ Pitagoras College of Bacabal

² Florence University Center

INTRODUCTION: The increase in cesarean section rates in Brazil, especially in the North and Northeast regions, raises concerns about associated neonatal outcomes, such as early neonatal mortality. Although cesarean delivery is an important alternative birth method,

its excessive use, often without clinical indication, may be related to greater risks for the newborn. **OBJECTIVE:** In this context, the present study aims to analyze whether the states in the Northeast region with the highest percentage of cesarean births also have higher rates of early neonatal mortality in the period from 2015 to 2023. **METHODS:** This is an epidemiological, descriptive, and retrospective study using secondary data from the Live Birth Information System (SINASC) and the Mortality Information System (SIM) of the nine northeastern states of Brazil. The proportions of cesarean sections and early neonatal mortality rates (deaths per thousand live births) were calculated. The data were organized in a spreadsheet for comparative analysis. **RESULTS:** The states with the highest proportions of cesarean births were Bahia (45.5%), Ceará (59.8%), Alagoas (53.7%), and Paraíba (60.2%). Regarding early neonatal mortality, the highest rates were observed in Bahia (8.9 per thousand), Maranhão (8.0), and Pernambuco (6.8). Although some regions with high cesarean rates also showed high neonatal mortality, such as Alagoas (7.0) and Bahia (8.9), a direct proportional relationship was not observed in all states, as exemplified by Sergipe (43.8% cesarean births and 8.3% mortality) and Ceará (59.8% cesarean births and 6.5% mortality). **CONCLUSION:** The data suggest that there is no simple correlation between the percentage of cesarean deliveries and the early neonatal mortality rate in the states of Northeast Brazil. Although states with high cesarean rates may have higher early neonatal mortality, other contextual factors—such as the quality of obstetric and neonatal care, hospital infrastructure, and regional inequalities—likely influence the outcomes. Analytical studies are recommended to further investigate this relationship.

104. EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS DUE TO RESPIRATORY DISEASES IN CHILDREN UNDER 1 YEAR OF AGE IN MARANHÃO (2015–2024)

Giulia Beatriz de Sousa Araujo¹, Davi Brito Castelo Branco¹ and Mariana Barreto Serra¹.

¹ Faculty of Medical Sciences

INTRODUCTION: In the first years of life, the respiratory system is still developing, which makes children more vulnerable to infections. Acute respiratory infections (ARIs), such as pneumonia, bronchiolitis, and influenza, remain an important public health challenge and are among the leading causes of hospitalizations and child deaths in Brazil. In Maranhão, a state marked by social vulnerabilities, understanding the profile of these infections in children under 1 year of age is essential to guide effective prevention and care strategies. **OBJECTIVE:** To analyze the frequency, most common causes, and mortality associated with ARIs in children under 1 year of age in Maranhão, from 2015 to 2024. **METHODS:** This is a descriptive, retrospective study using data from the Department of Informatics of the Unified Health System (DATASUS), extracted from the Hospital Information System (SIH/SUS). Hospitalizations and deaths recorded under Chapter X of ICD-10 (Diseases of the Respiratory System) were included, considering children under 1 year of age from 2015 to 2024. The variables analyzed were: year, main cause, municipality of occurrence, and outcome (discharge or death). **RESULTS:** Between 2015 and 2024, Maranhão recorded 46,473 hospitalizations due to respiratory diseases in children under 1 year of age, representing 10.2% of the 454,109 hospitalizations for these diseases across all age groups. The year 2023 had the highest number of hospitalizations (6,749). Pneumonia was the leading cause of hospitalizations (26,001) and deaths (329). In total, 594 deaths in children under 1 year of age were recorded due to respiratory diseases, with a peak in 2018 (44 deaths from pneumonia). São Luís accounted for the highest number

of hospitalizations (8,153) and deaths (292), followed by Imperatriz (5,030 hospitalizations, 95 deaths) and Santa Inês (3,575 hospitalizations). **CONCLUSION:** ARIs continue to significantly impact child health in Maranhão. Pneumonia accounts for more than half of the deaths in children under 1 year of age. The findings highlight the urgency of strengthening prevention measures, such as expanding vaccination coverage, early monitoring of symptoms, and investing in health infrastructure in the most affected municipalities. Continuous monitoring of these indicators is crucial to reducing preventable mortality and ensuring healthier childhoods, especially in the most vulnerable areas.

105. PREMATURITY AND ASSOCIATED FACTORS: AN ANALYSIS OF NORTHEAST BRAZIL BETWEEN 2019 AND 2023

Layna Ravenna Batista de Lima¹, Maria Júlia de Sena Lopes¹, Enzo Gabriel Sousa Pestana¹, Melody Roberta Bitarães Rocha¹, Saulo Sousa Araújo¹, Gabriel Ramos Goulart¹, and Alcione Miranda dos Santos¹.

¹ Federal University of Maranhão.

INTRODUCTION: Prematurity, defined as birth before 37 completed weeks of gestation, is a public health challenge due to its associated risks, such as neonatal morbidity and mortality, and respiratory and neurological disorders. Several factors contribute to its occurrence, including social and gestational aspects. **OBJECTIVE:** Analyze the main factors associated with prematurity. **METHODS:** This was a cross-sectional, retrospective, quantitative, observational epidemiological study. Secondary data from the Live Birth Information System (SINASC) were processed and analyzed in RStudio. Complete singleton birth records in the Northeast region between 2019 and 2023 were included. The dependent variable was prematurity, and the independent variables included maternal age, education, number of living children, prenatal visits, mode of delivery, and newborn sex. Statistical analysis used the Kolmogorov-Smirnov test, Mann-Whitney test, Pearson's chi-square test, and odds ratio calculation with a 95% confidence interval. **RESULTS:** The sample included 3,231,819 live births, with a prevalence of prematurity of 10.68% (n=345,242), with an increase in Ceará (12.27%) and Rio Grande do Norte (11.99%). Women aged 40 years or older had a 67.5% higher risk of prematurity (OR=1.67). The absence of prenatal consultations was associated with the outcome with a 3.38-fold higher risk (OR=3.38). Cesarean delivery demonstrated a lower risk of prematurity (OR=0.94). Furthermore, mothers with 11 to 15 children had a 77% higher predisposition to premature births (OR=1.77). Mothers with 12 or more years of education had a protective effect (OR=0.63), as did female gender (OR=0.92). **CONCLUSION:** Given the data presented, it is noteworthy that extreme maternal age, inadequate prenatal care, and high parity can influence the occurrence of prematurity. Cesarean delivery, education level, and the female sex of the newborn act as protective factors against this outcome. Thus, the importance of public policies focused on health education, expanded prenatal coverage, and special attention to groups of women in situations of social vulnerability in the Northeast is reinforced.

106. MORBIDITY AND MORTALITY DUE TO ACUTE BRONCHIOLITIS AND BRONCHITIS IN INDIGENOUS AND NON-INDIGENOUS PEOPLE IN MARANHÃO (2015-2025)

Bianka Albuquerque De Sousa¹, Larissa Da Silva Teixeira¹, Juliana De Oliveira Lima¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, Lucas Emanuel Macêdo Do Vale Silva¹, and Douglas Soares Da Costa².

¹ Pitagoras College of Bacabal

INTRODUCTION: Acute bronchiolitis and bronchitis are respiratory infections that affect the lower airways and are among the main causes of hospitalizations in Brazil, representing a serious public health problem, especially in Maranhão, which is among the states with an incidence at an alert level in 2025. These pathologies, when associated with social vulnerability factors, can evolve seriously and result in death, especially in indigenous populations, historically marked by inequalities in access to health care. **OBJECTIVE:** In this context, the present study aims to analyze the profile of hospitalizations and the mortality rate due to acute bronchiolitis and bronchitis among indigenous and non-indigenous people in the period from 2015 to 2025. **METHODS:** This is an ecological, descriptive, and retrospective study, based on secondary databases such as the Brazilian Institute of Geography and Statistics (IBGE) and the Department of Information and Informatics of the Unified Health System (DATASUS), through the SUS Hospital Information System (SIH/SUS). The variables analyzed were the number of hospitalizations, race/color, age group, and mortality rate over the last 10 years. **RESULTS:** Based on the data collected, it was observed that of the 22,473 hospitalizations reported during this period, only 133 corresponded to the Indigenous community, which represents 0.59% of the total number of hospitalizations. This scenario suggests possible underreporting in the state of Maranhão and difficulties in accessing health care for the Indigenous community. Furthermore, of the 133 hospitalizations, 110 occurred among children under 4 years of age, 78 in children under 1 year of age and 32 between 1 and 4 years of age, highlighting the higher incidence in infants. On the other hand, regarding the mortality rate, it was observed that the Indigenous population has the highest rate (0.75), compared to other racial categories: White (0.14); Asian (0.24); Mixed Race (0.29); Black (0.37); and No Information (0.49). Therefore, it is clear that indigenous people affected by acute bronchiolitis and bronchitis tend to develop more seriously, reflecting the considerable health inequities experienced by indigenous peoples, such as factors related to socioeconomic conditions and access to health care. **CONCLUSION:** Therefore, the data reinforce the need to strengthen inclusive policies, with investments aimed at reducing social inequities and expanding access to comprehensive and equitable health care.

107. HYPERTENSION IN MARANHÃO: ECOLOGICAL STUDY OF HOSPITALIZATIONS AND ASSOCIATED FACTORS IN THE TEN LARGEST CITIES

Mariana Martins Fernandes Paiva¹, Yasmin Ribardo Siqueira¹, and Phelipe Austríaco Teixeira¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Systemic Arterial Hypertension (SAH) is a major public health challenge, being the leading preventable cause of serious cardiovascular diseases, such as stroke and heart attack. In Brazil, its high prevalence and resulting complications reflect failures in primary care. As a Primary Care-Sensitive Condition (PCSC), SAH highlights the effectiveness of PHC—where high hospitalization rates indicate system weaknesses. In Maranhão, a state marked by social

and structural inequalities, this situation is even more critical. This study analyzes the state's 10 most populous municipalities to identify patterns of hospitalizations due to SAH, aiming to inform public policies that strengthen PHC, reduce inequalities, and prevent avoidable hospitalizations. **OBJECTIVE:** To analyze hospitalizations for Systemic Arterial Hypertension (ICD-10 I10-I15) and their relationship with socioeconomic and infrastructure indicators of Primary Health Care in the ten most populous municipalities of Maranhão between 2022 and 2024, characterizing the municipal profile. **METHODS:** This is an ecological study, with a quantitative and descriptive approach, carried out between 2022 and 2024. The ten most populous municipalities of Maranhão were selected, according to IBGE estimates (2022), adopting the municipality as the unit of analysis. Secondary data were obtained from the TABNET/DATASUS system and SIH/SUS in the module "Hospitalizations by Municipality", considering the "ICD-10 Chapter: Diseases of the Circulatory System" and the diagnosis "Essential (primary) hypertension". The information was organized into electronic spreadsheets, including the number of hospitalizations, place of residence, and year of occurrence. Additionally, demographic and socioeconomic data from the IBGE (Brazilian Institute of Geography and Statistics) were consulted. **RESULTS:** The analysis of hospitalizations due to Systemic Arterial Hypertension (SAH) between 2020 and 2024 in the ten most populous municipalities of Maranhão reveals a general downward trend in the number of hospitalizations. The statewide total fell from 7,111 hospitalizations in 2022 to 4,778 in 2024, representing an approximate reduction of 32.8%. Among the municipalities, São Luís maintained the highest absolute number of hospitalizations, with a significant drop from 200 cases in 2023 to 87 in 2024, indicating potential progress in primary care management and the monitoring of hypertensive patients. Imperatriz showed fluctuations, with a slight increase in 2024 (39 cases) after a decline in 2023. Medium-sized cities, such as Codó and Bacabal, maintained intermediate levels, while Timon and Caxias showed decreasing and low numbers, possibly reflecting better disease control. The absence of records in some municipalities, such as São José de Ribamar and Paço do Lumiar, is noteworthy, which may indicate underreporting or inconsistencies in the information system (SIH/SUS). **CONCLUSION:** We conclude that, despite the overall reduction in hospitalizations for hypertension, significant disparities persist between municipalities. The observed decrease may reflect the gradual strengthening of primary care, greater adherence to treatment, and better monitoring of hypertensive patients. However, the lack of records in some municipalities and the fluctuating numbers in others highlight weaknesses in surveillance and information consistency. These findings reinforce the need for continued investment in PHC infrastructure, in the qualification of health teams, and in improving recording and monitoring systems, ensuring greater data reliability and supporting chronic disease prevention strategies.

108. ANALYSIS OF INFLUENZA VACCINATION COVERAGE IN THE TEN LARGEST CITIES IN POPULATION IN THE STATE OF MARANHÃO: AN ECOLOGICAL STUDY

Mariana Martins Fernandes Paiva¹, Yasmin Ribardo Siqueira¹, and Phelipe Austríaco Teixeira¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Immunization against the influenza virus represents one of the most effective public health strategies for preventing severe cases, hospitalizations, and deaths. However, the socioeconomic and structural heterogeneity observed in Brazil poses challenges to the homogeneity of vaccination coverage. The state of

Maranhão, characterized by marked regional disparities, clearly illustrates this scenario, where adherence to vaccination campaigns varies significantly between municipalities. **OBJECTIVE:** To analyze influenza vaccine coverage and its correlation with socioeconomic and health infrastructure indicators in the ten most populous cities of the state of Maranhão (São Luís, Imperatriz, São José de Ribamar, Timon, Caxias, Paço do Lumiar, Codó, Açailândia, Bacabal, and Balsas), in order to identify factors associated with immunization performance. **METHODS:** This is an ecological study with a quantitative and descriptive approach, analyzing the period from 2022 to 2024. The ten most populous municipalities in the state were selected, according to IBGE estimates (2022). Secondary data were obtained through the TABNET/DATASUS platform, using the descriptors "National Influenza Vaccination Campaign," "Campaign Year," "Federal Unit (Maranhão)," and "Municipality." The variables collected included the target population, the total number of doses administered, and the percentage of vaccination coverage achieved in each municipality. The results analysis stage involved calculating vaccination coverage and comparing it between municipalities, considering their performance in relation to the national goal of 90% coverage. **RESULTS:** Data analysis shows a progressive downward trend in immunization rates, both at the municipal and state levels. In 2022, the state average reached 81.7%, approaching the recommended target of 90%. However, in 2023, it dropped to 79.0%, and in 2024, coverage dropped sharply to 51.7%, even with the increase in the number of target individuals. Among the municipalities evaluated, significant heterogeneity in campaign performance was observed. In 2022, Caxias (115%), Bacabal (101.3%), São José de Ribamar (98.9%), and Açailândia (96.9%) exceeded the established target, indicating good operational efficiency of local actions. However, most cities experienced a significant reduction in coverage in subsequent years, especially in 2024, when none reached the recommended level. The 2024 data reveal the most critical scenario: no municipality achieved 65% coverage, and the state recorded a drop of more than 30 percentage points compared to 2022. This decline may be associated with factors such as reduced population participation, logistical challenges in the campaign, misinformation, and weakening of active contact strategies in Primary Health Care. **CONCLUSION:** We conclude that influenza vaccination coverage in the ten most populous municipalities of Maranhão showed a significant reduction between 2022 and 2024, highlighting weaknesses in the maintenance of immunization strategies. Although some municipalities exceeded the 90% target in 2022, none managed to repeat this performance in subsequent years, reflecting a progressive decline in population participation and possible failures in the operationalization of the campaigns. These findings indicate that vaccine availability alone does not guarantee high coverage. It is essential to strengthen Primary Health Care, expand social communication in health, and adopt strategies adapted to local realities to reverse the low coverage scenario.

109. RELATIONSHIP BETWEEN BASIC SANITATION AND ACUTE DIARRHEAL DISEASE IN MARANHÃO: EPIDEMIOLOGICAL STUDY (2019–2025)

Bianka Albuquerque De Sousa¹, Larissa Da Silva Teixeira¹, Juliana De Oliveira Lima¹, Daniel Alves Alvarenga¹, João Lucas Sousa Barros¹, Lucas Emanuel Macêdo Do Vale Silva¹, and Douglas Soares Da Costa¹.

¹ Pitagoras College of Bacabal

INTRODUCTION: The lack of basic sanitation is a critical social determinant of health that favors the spread of pathogens, through

waterborne or fecal-oral transmission, responsible for enteric infections such as Acute Diarrheal Disease (ADD). This condition is particularly prevalent in areas with poor access to drinking water and sewage systems. **OBJECTIVE:** In this context, the present study seeks to analyze the relationship between low basic sanitation coverage and the number of hospitalizations due to Acute Diarrheal Disease, as well as the epidemiological profile of the disease in Maranhão between 2019 and 2025. **METHODS:** This is an ecological, descriptive, and retrospective study, based on secondary databases such as the Brazilian Institute of Geography and Statistics (IBGE) and the Department of Information and Informatics of the Unified Health System (DATASUS), through the SUS Hospital Information System (SIH/SUS). The variables analyzed were age group, sex, race/color, basic sanitation coverage, and number of hospitalizations between 2019 and 2025. **RESULTS:** From this, it was observed that in this period the highest proportion of hospitalizations for ADD occurred in the age group of 1 to 4 years, with a prevalence of the female sex (20.81% higher than the male) and of the brown race (82.33%). Furthermore, municipalities with lower sewage network coverage, such as São Luís Gonzaga do Maranhão (8.7%), Lago da Pedra (16.9%) and Bacabal (30.3%), presented hospitalization rates of 2,611.1, 852.3 and 132.9 per 100,000 inhabitants, respectively, in 2024. In contrast to this scenario, cities with greater sanitation coverage, such as São Luís (65.4%), presented only 24 hospitalizations per 100,000 inhabitants in the same year. These data highlight the negative impact of the lack of basic sanitation on hospital admission rates for ADD, reinforcing that the absence of adequate sanitary infrastructure increases exposure to enteric pathogens. **CONCLUSION:** Therefore, increasing sanitation coverage in Maranhão is an essential measure to reduce hospitalizations due to preventable infectious diseases, which directly contributes to improving public health indicators and ensuring equity in access to a healthy environment.

110. ORA-PRO-NÓBIS AS AN ALTERNATIVE IN THE COMBAT OF IRON-DEFICIENCY ANEMIAS

Rôzele Robson Marques¹, Méllany Pinheiro Cacau¹, Heloisa Maria Lima Gonçalves¹, Thiago Vinicius De Araújo Costa¹, Isaac Rafi Lopes Nassar¹, Josemar Marcelino Ferreira Godinho Junior¹ And Yuri Lopes Nassar².

¹ Florence University Center

INTRODUCTION: Unconventional Food Plants (UFPs), despite their rich nutritional potential, are often neglected. UFPs represent an accessible solution to complement and diversify diets, in addition to reducing costs, especially for vulnerable populations. In this context, ora-pro-nóbis (*Pereskia aculeata* Miller) emerges as an alternative for mineral supplementation, including iron, standing out for its high content, which surpasses that of foods commonly associated with this mineral. Anemia, defined by a low concentration of red blood cells or hemoglobin, is a serious public health problem, with iron deficiency being its most common cause. The daily requirement for iron varies significantly with age, sex, and physiological conditions. Children need 7-10 mg/day during early childhood. Adolescents, on average, require 13 mg/day. For adults, men require 8 mg/day, while women of reproductive age need approximately 18 mg/day. **OBJECTIVE:** This study aimed to explore the potential of ora-pro-nóbis in the combat of iron-deficiency anemia. **METHODS:** This study is based on an exploratory literature review. The research was conducted using the scientific databases Scielo and PubMed. Articles written in English, Portuguese, and Spanish were included, with no restriction on the publication date. The search used the following keywords: ora-pro-nóbis, Unconventional Food Plants (UFPs), *Pereskia aculeata* Mill., and iron-deficiency anemia. **RESULTS:** The analyzed studies confirm that ora-pro-nóbis is an exceptional nutritional source, standing out for its

high iron content, which is frequently superior to that of vegetables such as spinach, making it a promising ally in the fight against iron-deficiency anemia. The results indicate iron levels ranging from 14.20 mg to 20.56 mg per 100g. Its robustness and ease of cultivation in domestic environments reinforce its role as an accessible and low-cost dietary alternative, crucial for improving nutritional status. **CONCLUSION:** *Ora-pro-nóbis* emerges as a UFP of notable relevance for food and nutritional security, especially in regions like Maranhão, where its cultivation and use can be further encouraged. The reviewed studies confirm its excellent nutritional profile, particularly highlighting its high iron content, which positions it as an accessible alternative in the fight against iron-deficiency anemia.

111. CONTINUOUS MEDICAL TRAINING: THE ROLE OF MOBILE TECHNOLOGIES ANDWEARABLES IN SURGICAL EDUCATION

Danielle Bandeira Campos Rodrigues¹, Jose Daniel Oliveira Angelim da Silva¹, Darleane Batista De Oliveira Angelim¹, Isabelle Maria Veloso Braz¹, Hildelene Amélia De Araújo Dantas¹, Haline Cristina Gonçalves Dantas De Almeida¹, and Erika Chirley Chaib Araujo¹.

¹ Idomed-Edufor Faculty of Health Sciences

INTRODUCTION: The development of surgical skills is a fundamental component of medical education, traditionally based on didactic methods, laboratory simulation, and supervised training. With the advancement of digital technologies, new teaching modalities have emerged, including Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and mobile devices, offering immersive and interactive learning environments. These Extended Reality (XR) technologies promise to overcome the limitations of conventional methods by providing standardized, repeatable, and safe training without risks to patients (MAO et al., 2021). The increasing availability of these tools in medical education demands a systematic evaluation of their effectiveness in developing surgical competencies and their feasibility for implementation in various professional training contexts (CO et al., 2023; WOODALL et al., 2024). **OBJECTIVE:** To synthesize existing evidence from systematic reviews published between 2015 and 2024 to evaluate the comparative effectiveness of Extended Reality (XR) technologies (VR, AR, MR), mobile technologies, and wearables versus traditional methods in the development of surgical competencies. **METHODS:** This study is a synthesis of systematic reviews published between 2015 and 2024 in English or Portuguese. The search was conducted in the PubMed, SciELO, Google Scholar, and BMC Medical Education databases. The descriptors used focused on "surgical education," "medical training," "mobile technologies," "wearables," and "extended reality." Duplicate articles or those not directly related to the topic were excluded. **RESULTS:** 10 articles were analyzed out of 50 found. Virtual/Augmented Reality technologies demonstrated superior effectiveness compared to traditional methods in developing surgical skills. Immersive Virtual Reality, in particular, provided significant improvements in technical performance, including 18-43% reductions in procedure time and higher accuracy (MAO et al., 2021), in addition to enhanced speed and performance (PATEL et al., 2024). While VR proved superior to didactic training, it showed equivalence or inferiority to "dry lab" in some contexts (CO et al., 2023). In orthopedic surgery, it resulted in faster performance with fewer errors (LONGO et al., 2021), with immersive technologies generally superior in technical proficiency and time, and conferring greater user confidence (SADEK et al., 2023). Although VR/AR demonstrated better information retention (SADEK et al., 2023) and superiority over didactic teaching (CO et al., 2023), other studies found no significant difference in knowledge acquisition

(WOODALL et al., 2024). However, user satisfaction, engagement, and confidence were consistently positive and high across all evaluations (MAO et al., 2021; WOODALL et al., 2024; PATEL et al., 2024; ARJOMANDI RAD et al., 2021). **CONCLUSION:** XR technologies represent a promising tool for surgical training, especially for developing technical and procedural skills. Although they demonstrate consistent superiority over traditional didactic methods, their effectiveness varies according to the specific context. The main obstacles to widespread implementation include high costs, technical limitations, and usability issues, reported in six of the ten analyzed studies. The heterogeneity of studies and the need for more robust cost-effectiveness analyses limit the generalization of findings to different medical training contexts.

112. INGUINAL HERNIOPLASTY VIDEO-ASSISTED VERSUS ROBOTIC: A COMPARISON OF SURGICAL APPROACHES

Maria Eduarda Ribeiro Campelo¹, André Guimarães de Araújo¹, Maria Fernanda Lauande Cardoso Lima¹, Yasmin Maciel Costa², and Giuliano Peixoto Campelo³.

¹ Federal University of Maranhão.

² State University of Maranhão.

³ Procirúrgico.

INTRODUCTION: Inguinal hernioplasty is one of the most common surgeries performed by general surgeons. It is estimated that, globally, more than 20 million procedures for the treatment of this condition are performed annually. Therefore, it is essential to deepen the analysis of the available surgical approaches, highlighting the robotic and laparoscopic techniques. **OBJECTIVE:** To compare the postoperative effects of robotic and laparoscopic approaches in the treatment of inguinal hernia in adults. **METHODS:** Integrative literature review, in which six articles published between 2020 and 2025 were selected from the PubMed database, all of which were relevant to the topic. For the search, the descriptors "robotic," "laparoscopic," and "inguinal hernia" were used, combined with the Boolean operator "AND." **RESULTS:** In a meta-analysis involving 1,120 patients, no statistically significant differences were observed in the variables of postoperative pain, hospital length of stay, or complication rate. Additionally, the readmission rate and the incidence of seroma did not show different results between the two techniques. However, when analyzing the variable "surgical site infection," a threefold higher likelihood of infection was found in robot-assisted surgeries compared to the laparoscopic approach. Moreover, it was noted that the 3D, high-definition imaging provided by robotic surgery facilitates dissection of the retroperitoneal space, especially in patients who have undergone prostatectomy. **CONCLUSION:** The articles confirm that the robotization of medicine provides opportunities for greater dexterity and precision. However, the increase in operative time, costs, and potential infections poses a challenge to this process and highlights the need for careful evaluation when indicating different surgical techniques.

113. EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR ACUTE MYOCARDIAL INFARCTION IN ELDERLY PEOPLE IN THE MUNICIPALITY OF IMPERATRIZ FROM 2020 TO 2024

Laura Batista Cruz¹, Gabriel Costa Garcia¹, Cecília Giovanna Dos Santos Sarmiento¹, Júlia Marreiros Silva¹, Lara Vitória Araújo De Oliveira¹, Gabriel Alves Lima² and Wellyson Da Cunha Araújo Firmo¹.

¹ State University of the Tocantina Region of Maranhão

² Federal University of Lavras.

INTRODUCTION: Acute myocardial infarction (AMI) is a condition characterized by the death of heart cells due to a lack of blood supply, which causes obstruction of the coronary arteries and impairs blood flow to the heart muscle. Chest pain is characteristic of this condition, with the possibility of radiation to other parts of the body. This pathology mainly affects the elderly and can be caused by aging and diseases that are common in this social group, such as hypertension, diabetes, and obesity. **OBJECTIVE:** This study aimed to characterize the epidemiological profile of AMI hospitalizations in the elderly in the city of Imperatriz over the last 5 years, from 2020 to 2024. **METHODS:** This is a retrospective and quantitative study based on data obtained from the Department of Informatics of the Unified Health System (DATASUS) using the TabNet platform. The variables of mortality rate and hospitalizations were analyzed based on color/race, age group, and sex between 2020 and 2024. **RESULTS:** This is a retrospective and quantitative study based on data obtained from the Department of Informatics of the Unified Health System (DATASUS) through the platform's data tabulation system (TABNET). The variables of mortality rate and hospitalizations were analyzed based on race/color, age group, and gender between 2020 and 2024 in the municipality of Imperatriz, Maranhão. During this period, there were 1,870 hospital admissions for AMI in the elderly in Imperatriz, 1,160 of which were in the elderly, approximately 62.00%. The most affected age groups were 65 to 69 (160) and 70 to 74 years (161). This group had a mortality rate of 14.51%, while in non-elderly individuals it was 5.33%. When looking at gender, it was noted that the majority were men, with 461 cases (64.90%), while women accounted for 249 (35.10%) of hospitalizations. However, the mortality rate was higher in women (17.67%) when compared to men (12.80%). In terms of race/color, the brown group stood out, with 305 of the hospitalization cases (42.90%). When analyzing the period of hospitalizations, a greater number of these were observed in 2023 (158) and an increase in numbers over the last 5 years. **CONCLUSION:** There is a clear need for prior action to prevent AMI, especially in the elderly. It is worth emphasizing, therefore, the importance of engaging in public health policies that promote early diagnosis in this risk group, in order to reduce overcrowding in the basic health system and harmful effects on patients, with treatment already in the early stages. This will minimize the number of elderly people, already in early old age, affected by this life-threatening disease.

114. EPIDEMIOLOGICAL PROFILE OF CONGENITAL SYPHILIS AS A MARKER OF PRENATAL CARE FAILURES IN MARANHÃO, BRAZIL: AN ANALYSIS FROM 2017 TO 2023

Camilly Veras Ferreira dos Santos¹, Ana Clara Porto de Sá Ferreira¹, Felipe Dominici Castelo Branco¹, Anna Luiza Menezes Carvalho Teixeira¹, and Mylena Andréa Oliveira Torres¹.

¹ Ceuma University

INTRODUCTION: Congenital syphilis is a notifiable infectious disease and a crucial indicator of prenatal care quality. Despite advances in screening and treatment, the state of Maranhão (Brazil) continues to present high incidence rates. Studies highlight that failures in early diagnosis, prenatal follow-up, and treatment adherence compromise the prevention of vertical transmission. **OBJECTIVE:** To investigate the epidemiological profile of congenital syphilis cases among pregnant women in Maranhão from 2017 to 2023, analyzing indicators of failures in surveillance and continuity of prenatal care. **METHODS:** This retrospective, descriptive, and quantitative

epidemiological study analyzed confirmed cases of congenital syphilis in Maranhão (2017–2023) obtained from the SINAN database via TABNET/DATASUS, following the criteria of the Brazilian Ministry of Health. Cases involving maternal infection during pregnancy and recorded prenatal care were included, while incomplete or missing data were excluded. Data collection was performed independently by the authors and validated jointly. Sociodemographic, clinical, and geographic variables were analyzed using absolute and relative frequencies. As this study used public and anonymized data, ethical approval was not required, in accordance with CNS Resolution No. 510/2016. **RESULTS:** Among the 4,258 reported cases of congenital syphilis in Maranhão (2017–2023), 1,777 occurred in pregnant women diagnosed during prenatal care. Most were of mixed race (56.3%, n=1,001), followed by white (4.4%, n=78) and black women (1.5%, n=27). The predominant age groups were 20–24 years (24.3%, n=432) and 15–19 years (14.4%, n=255). Regarding education level, complete secondary education (20.3%, n=361) and incomplete primary education (13.8%, n=245) were most frequent. Only 18.7% (n=332) of sexual partners received treatment, while 34.1% (n=606) did not. Most cases were classified as recent congenital syphilis (65.8%, n=1,170). The highest numbers of notifications were recorded in São Luís (31.2%, n=554) and Imperatriz (11%, n=197). **CONCLUSION:** Congenital syphilis remains a significant public health problem in Maranhão, particularly among young women of varying educational levels. Despite prenatal follow-up, treatment failure among partners and late diagnoses reveal critical gaps in clinical management. The predominance of recent cases indicates persistent weaknesses in intervention strategies and continuity of care. Strengthening epidemiological surveillance, improving treatment adherence, and integrating primary care actions are essential to prevent vertical transmission and enhance maternal and child health outcomes.

115. ANALYSIS OF MENTAL HEALTH ACTIONS DEVELOPED BY THE SCHOOL HEALTH PROGRAM IN SÃO LUÍS, IN THE YEARS 2023-2024

André Luiz Barros Sousa¹, Carolina Campos de Carvalho¹, Pietra Fernanda Gomes Fernandes², Camila Coutinho Martins Guimarães² and Cristiane Fiquene Conti³.

¹ Ceuma University

² Pitágoras College of Medicine in Codó

³ Federal University of Maranhão

INTRODUCTION: The mental health of children and adolescents is a fundamental aspect of the overall development and well-being of this population. In recent years, especially during and after the COVID-19 pandemic, there has been a significant increase in cases of anxiety, depression, and socialization difficulties among children and adolescents, aggravated by social isolation and the interruption of in-person school activities. In response to this scenario, the Ministry of Health published Technical Note No. 05/2023, which guides the resumption and strengthening of mental health actions in the School Health Program (PSE), highlighting the role of school environments as strategic spaces for mental health promotion, prevention, and care. In this context, the PSE takes a leading role in coordinating health and education for actions aimed at the psychosocial well-being of students. **OBJECTIVE:** Analyze the mental health actions developed by the PSE in the municipality of São Luís, in the state of Maranhão, in the years 2023 and 2024. **METHODS:** A cross-sectional study with a descriptive quantitative approach was conducted by analyzing data available in the Primary Care Health Information System (SISAB) for the municipality of São Luís, Maranhão, in 2023 and 2024. Records of collective mental health activities developed by the PSE were

considered, as well as the total number of participants who benefited. **RESULTS:** In 2023, São Luís registered 49 collective mental health actions through the PSE, with the participation of 3,003 people. In 2024, there was a significant increase in reach: there were 288 activities, covering 15,543 participants. In total for the two-year period, the PSE developed 337 mental health activities, impacting 18,546 participants. **CONCLUSION:** Mental health actions under the PSE in São Luís show significant progress, especially in 2024, reflecting the strengthening of national post-pandemic guidelines. In this context, the positive impact of Technical Note No. 05/2023 from the Ministry of Health stands out. With this regulation, there has been a quantitative expansion of activities and a strengthening of strategies for integration between health and education. In addition, the increase in activities and the number of participants highlights the joint commitment of these sectors to promoting psychosocial care, which is essential for the healthy development of children and adolescents. Therefore, the expansion and continuity of these actions are essential to address current and future challenges related to child and adolescent mental health.

116. EVALUATION OF IMMEDIATE AND DELAYED BREAST RECONSTRUCTIONS IN MASTECTOMIZED BREAST CANCER PATIENTS IN THE SUS

Annamy Santos abreu¹, Isadora Costa Gonçalves¹, Saulo Andrada Castanhede Silva¹, Ana Maria Teresa Ferreira Gomes¹, Lana Maria de Nazaré Veras Trovão Brito¹, Halisson Lucas Barbosa Moura¹ and Thiago Arôso Mendes de Araújo¹.

¹ Ceuma University

INTRODUCTION: Breast cancer is the most common cancer among women in Brazil. Mastectomy, although effective, can cause psychosocial impacts. Reconstruction aims to restore quality of life. Immediate reconstruction, performed at the same time as the mastectomy, reduces the number of procedures and emotional effects. Delayed reconstruction, performed after cancer treatment, is indicated in cases such as adjuvant radiotherapy. In the Brazilian Unified Health System (SUS), access to reconstruction still faces challenges, such as a shortage of professionals and limited infrastructure. **OBJECTIVE:** Analyze clinical, surgical, and psychosocial outcomes of immediate and delayed breast reconstruction in women who underwent mastectomy through the SUS, considering clinical profile, resources, and adjuvant therapies. **METHODS:** Integrative literature review, with searches in the SciELO, PubMed, and LILACS databases between 2010 and 2023. The descriptors "breast reconstruction," "mastectomy," "SUS," and "breast cancer" were used. Qualitative analysis identified patterns in comparative studies on reconstructive techniques in the SUS. **RESULTS:** The choice of breast reconstruction technique should be individualized, considering the patient's profile, the team's experience, resources, and costs. This integrative review analyzed clinical evidence on immediate and delayed techniques in mastectomized women, focusing on the reality of the SUS. The retrospective study showed that 73% of reconstructions were immediate, with a predominance of implants, expanders, and flaps (TRAM and latissimus dorsi). Implants had shorter surgical times; flaps required greater complexity and recovery. Major complications occurred in 16.5% of cases, mainly necrosis, infection, and prosthesis extrusion, which were more common in patients undergoing radiotherapy, chemotherapy, or who smoked. The results reinforce the importance of careful evaluation and equitable access in the SUS, with investment in training and infrastructure to ensure safe and

comprehensive reconstruction in oncological care. **CONCLUSION:** Breast reconstruction represents an important step in physical and emotional rehabilitation after mastectomy. The data analyzed reinforce the predominance of the immediate technique in the SUS, with emphasis on the use of implants, although flaps are still necessary in more complex cases. Complications such as necrosis and infection are more common in patients undergoing radiotherapy or with risk factors such as smoking. The importance of individualized assessment, comprehensive care, and equal access to reconstruction in the SUS is highlighted.

117. IMPACTS OF SEMAGLUTIDE ON DIABETIC RETINOPATHY

Maryana Guterres¹, Ângelo Marques¹, Andressa Martins¹, Izadora Liz¹, Rafael Pereira¹, Sabrina Carvalho¹, And Adriana Xavier¹.

¹ Ceuma University

INTRODUCTION: Diabetic retinopathy (DR) is a common complication of type 2 diabetes (T2D) and the leading cause of preventable blindness in adults. Semaglutide, a GLP-1 receptor agonist used to control T2D and obesity, has shown neuroprotective and anti-inflammatory potential, with favorable effects on the retina. Preclinical studies suggest that it reduces neuroinflammation and vascular leakage in the retina, independently of glucose. However, clinical trials such as SUSTAIN-6 have indicated an increase in adverse retinal events in patients with prior DR, while observational studies have shown that semaglutide does not accelerate the progression of DR. Therefore, it is crucial to clarify the effects of semaglutide on DR for clinical practice. **METHODS:** This is an integrative review, collecting data from complementary secondary sources. Articles were selected from PubMed, MEDLINE, and ScienceDirect, using the descriptors "type 2 diabetes," "diabetic retinopathy," and "semaglutide" in Portuguese and English. Studies that addressed the relationship between semaglutide and DR progression were included, resulting in nine selected sources. **RESULTS:** Semaglutide, used to treat type 2 diabetes, has varied effects on diabetic retinopathy. In some cases, temporary worsening is observed, especially in patients with pre-existing DR, due to the rapid reduction in blood glucose levels, which overloads the retina and accelerates damage. However, semaglutide can reduce retinal inflammation and preserve ocular vessels, with reports of improvements in advanced stages. Although it poses risks in certain profiles, its clinical benefits are clear. Continuous medical monitoring, especially in the first few months and in patients with a history of retinal changes, is essential. **CONCLUSION:** Semaglutide, recognized for its glycemic control and reduction of cardiovascular events in type 2 diabetes, has a complex impact on diabetic retinopathy. Although it can reduce inflammation and preserve retinal vascular integrity, there are also reports of transient worsening of the disease in patients with a sudden drop in glycated hemoglobin. Treatment requires careful planning and ophthalmological monitoring, with an emphasis on safety. Further long-term studies are needed to clarify its impact on the retina and ensure patient safety.

Oral Presentations

CASE REPORTS AND EXPERIENCE REPORTS

01. PROMOTING VACCINATION AMONG UNIVERSITY STUDENTS: EXPERIENCE REPORT AT A HIGHER EDUCATION INSTITUTION IN MARANHÃO

Judith Carneiro Maciel¹, Luca Ribeiro Santos Araújo¹ and Ludmilla Santos Silva de Mesquita¹.

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Vaccination is one of the most effective ways to prevent vaccine-preventable diseases, promote public health, promote epidemiological surveillance, and mitigate outbreaks. However, many adults, especially college students, keep their vaccination records out of date, compromising individual and collective protection. **OBJECTIVE:** Report the extension experience of the project "Vaccine in Action: Protection for Life", developed at a higher education institution in Imperatriz (MA), focusing on raising awareness about vaccination in young adults. **EXPERIENCE REPORT:** First, a brochure illustrating the vaccination schedule for the 20-59 age group was created, containing accessible information on vaccines, preventable diseases, and the importance of keeping vaccination records up to date for individual and collective health. Subsequently, posters with QR codes providing access to the digital content were distributed and posted in academic circulation areas to facilitate easy access to this information. Finally, project volunteers conducted in-person health education activities with university students during peak times, such as waiting in meal lines, in the school's hallways, and in common areas such as the food court. On these occasions, volunteers approached students, distributed brochures, and answered questions. Twenty-five university students actively participated, demonstrating interest, engagement, and receptiveness. These mechanisms facilitated the dissemination of the content and ensured greater knowledge about the university vaccination record among students. **REFLECTION ON THE EXPERIENCE:** The extension experience proved to be highly relevant to society. Many questions about vaccination were answered, health education was provided, and the university population received appropriate guidance. **CONCLUSIONS AND RECOMMENDATIONS:** The outreach project "Vaccine in Action: Protection for Life" promoted primary prevention in a critical, participatory, and accessible way. This tool expanded knowledge, promoted mass awareness, and debunked much misinformation about vaccines among academics.

02. NEPHROTIC SYNDROME SECONDARY TO GASTRIC NEOPLASIA IN A YOUNG PATIENT: CASE REPORT

Luanna Cristina Barros de Carvalho¹, Samira Leite da Silva¹, Beatriz Santos Pinheiro¹, Carlos Daniel Lobato da Costa¹, Sávio Leite da Silva¹ and Teresa Cristina Alves Ferreira²

¹ Federal University of Maranhão

INTRODUCTION: Nephrotic syndrome (NS) can be primary or secondary to infections, medications, and/or neoplasms. In the latter case, it is more common in the elderly, with a median age of 60. NS in young patients, therefore, is uncommon, but possible and should not be overlooked when investigating nephrotic patients, even young ones. Access to the patient's data was authorized by the Research Ethics Committee (CEP) under opinion number 5.836.575/2022. **OBJECTIVE:** To report a clinical case of a young patient with nephrotic syndrome secondary to gastric neoplasm. **CASE DESCRIPTION:** A 36-year-old, male, farmer, from Pinheiro - Maranhão, presented with anasarca that began in September 2023 and was associated with foamy urine. He had a history of acute myocardial infarction in June 2023 and was undergoing treatment for hypothyroidism. He also had a family history of premature death of his father and brother from stroke, both at the age of 35. Initial investigation confirmed NS, with proteinuria of 6.9g/24h, hypoalbuminemia of 2.67g/dL, and severe dyslipidemia (LDL >300mg/dL; triglycerides >500mg/dL). Renal function was initially preserved (creatinine 0.72mg/dL; GFR >90mL/min), and etiological investigation, including serology and

autoantibodies, was negative. Renal ultrasound revealed no abnormalities. The patient developed hypercoagulability manifested by deep vein thrombosis (DVT) of the left subclavian vein in May 2024, which delayed renal biopsy due to the need for anticoagulation. He was maintained on antiproteinuric agents until clearance for renal biopsy. He was admitted for biopsy in February 2025, when he had a new DVT, this time in the inferior vena cava. An abdominal CT scan during this admission revealed an image suggestive of gastric neoplasia, confirmed by endoscopic biopsy as a grade 12 gastric neuroendocrine tumor (NET). Membranous NS was presumed to be a paraneoplastic syndrome, dispensing with renal biopsy. The patient developed deteriorating renal function (creatinine: 4.33 mg/dL; GFR: 19 mL/min), generalized edema, and signs of protein-calorie malnutrition. Renal function worsened due to probable renal vein thrombosis. He awaits oncological surgery and will continue to be monitored in the nephrology outpatient clinic. **CONCLUSION:** Although rare, NS secondary to neoplasia in young patients can occur and should not be overlooked during the investigation, so as not to delay the diagnosis of the underlying disease and early treatment of life-threatening conditions.

03. CITIZEN RESCUER: TRAINING FIRST AID MULTIPLIERS IN A SCHOOL IN ALCÂNTARA

Jorge Fernando Lopes da Cunha¹, João Victor Cunha Silva¹, Maria Beatriz Soares Vieira¹, Davi Nunes Marques¹, Isabela Marinho da Cunha¹, João Pedro Belaglovis Castelo Branco¹, Santiago Servin¹

¹ Federal University of Maranhão.

INTRODUCTION: The early action of community rescuers reduces the time between cardiorespiratory arrest and the start of cardiopulmonary resuscitation (CPR), positively impacting survival. Annual CPR training for schoolchildren aged 12 and older is recommended as an effective strategy to broaden the community response to out-of-hospital cardiac arrests. **OBJECTIVE:** Report on first aid training conducted by an academic league from the medical course in a high school in Alcântara - MA. **EXPERIENCE REPORT:** The Citizen Rescuer project, promoted by an academic medicine league, offers basic life support (BLS) education to the lay public. On 05/25/2024, in a federal high school in Alcântara, 6 students trained 60 laypeople, including students, teachers, and community members. The reception was excellent, and the school environment proved to be welcoming and attentive to the need for health care. The course included theoretical classes on CPR, choking maneuvers, and initial burn management, followed by practical stations for adult and pediatric CPR, choking simulations, and initial care. Original slides produced by the league members under faculty supervision were used, in addition to eight CPR manikins (four adult and four pediatric). **REFLECTION ON THE EXPERIENCE:** Self-confidence is highlighted in the literature as a key predictor of good performance in emergencies. The practical training increased the participant's perception of competence. Education in schools is effective because adolescents are excellent multipliers of knowledge for their families and communities. The invitation received to provide training in another municipality demonstrates recognition and demand for the project, showing that training laypeople is an advance in how BLS is socially perceived. The enthusiasm of the participants, coupled with the interest in replicating the acquired knowledge, shows that educational actions in first aid have the potential to create a culture of prevention and rapid response both within and outside the school environment. **CONCLUSIONS AND RECOMMENDATIONS:** The training in Alcântara demonstrated that the school environment is

strategic for disseminating first aid, forming multiplying agents who influence families and communities. The expansion to neighboring municipalities reinforces the need to integrate such training as a policy for permanent health education.

04. INTERGENERATIONAL EDUCATION ON THE SAFE USE OF MEDICINAL PLANTS WITH ELDERLY IN UNIVERSITY EXTENSION PROGRAM

Júlia Leitão Neves Azevedo¹, Erik Lucas Silva de Sousa¹, Arielly D'arc Campelo Ferreira¹, and Wellyson da Cunha Araújo Firmo².

¹ State University of the Tocantina Region of Maranhão

INTRODUCTION: Health education is understood as a combination of planned learning experiences aimed at empowering individuals to gain greater control over the determinants of health and their related behaviors, as recommended by the World Health Organization (WHO). Among the intergenerational educational practices, a university extension program aimed at the elderly stands out, which promotes thematic workshops with the participation of students from the health area, uniting academic and popular knowledge in a mutual training process. In this context, an educational action was developed focusing on the safe use of medicinal plants in aging, fundamental to prevent risks associated with inappropriate use, valuing traditional knowledge and promoting self-care. **OBJECTIVE:** Report the experience of holding classes in phytotherapy with elderly people, within a university extension program, with emphasis on health education, valorization of traditional knowledge and humanized training of medical students. **EXPERIENCE REPORT:** The activities took place between April and July 2025, with weekly in-person meetings in a university space designed for seniors. Sixty-five seniors enrolled in the program, four students, and one healthcare professor participated. Classes were organized around thematic areas - cardiovascular, renal, and dermatological phytotherapy - that addressed the safe use of medicinal plants for controlling hypertension, regulating urine output, treating dermatitis, and promoting healing. Each meeting included discussion groups, interactive presentations, and hands-on workshops. Educational activities included memory games, role-playing, themed drawings, and the collective construction of "popular knowledge maps", aimed at recognizing collective knowledge and aligning it with Freire's methodology. Educational products included an illustrated popular booklet with traditional recipes and guidelines on the safe use of medicinal plants, as well as a vertical garden made from plastic bottles to encourage home cultivation. Furthermore, affective memory cards were produced in which participants reported family experiences with medicinal plants, with the purpose of strengthening cultural ties. **REFLECTION ON THE EXPERIENCE:** The experience highlighted the transformative potential of intergenerational health education. A space for dialogue between scientific knowledge and popular culture was established, recognizing the knowledge accumulated throughout the lives of older adults and legitimizing traditional practices within the scope of health interventions. For the students, the activity resulted in the development of sensitive listening, empathy, and communication skills, contributing to a more humanized education aligned with the sociocultural realities of the region. The active participation and enthusiasm of older adults in the workshops indicated a demand for educational practices that recognize their knowledge and promote autonomy in self-care. These findings highlight the importance of incorporating community perspectives into training programs and primary health care strategies.

CONCLUSIONS AND RECOMMENDATIONS: The experiment proved to be a powerful strategy for promoting health in aging, by integrating scientific and traditional knowledge in a respectful and critical way. The use of medicinal plants, when performed with adequate guidance, can promote safe self-care and autonomy of the elderly person. It is recommended the expansion of similar actions in university extension programs and primary health care, with encouragement to interdisciplinarity, integrative practices and appreciation of popular wisdom as a legitimate form of care.

05. FOREIGN BODY ASPIRATION IN A PATIENT WITH FACIAL TRAUMA: A CASE REPORT.

Mariana Chaves Mendonça¹, Pedro Marcondes Bezerra Fernandes¹, Alexandre Porto Pereira Galdez², Elias Amorim² Kivia Mayana Santos de Oliveira¹ and Bruno Mileno Magalhães de Carvalho¹.

¹ Federal University of Maranhão

INTRODUCTION: Foreign Body (FB) obstruction is a condition characterized by the total or partial inability of air to pass through the respiratory tract. This condition represents a public health concern, as the inflammatory response it triggers may lead to hospitalizations and complications such as hypoxemia and respiratory failure. Furthermore, Facial Trauma (FT) may act as a predisposing factor for airway obstruction, due to the possibility of aspiration during accidents involving the face. This study was approved by the Research Ethics Committee under Certificate of Ethical Appreciation (CAAE) No. 76634522.0.0000.5087. **OBJECTIVE:** To report a case of facial trauma that led to a tracheal foreign body obstruction, as well as the procedure performed for its removal. **CASE DESCRIPTION:** A 30-year-old male patient sustained facial trauma in a motorcycle accident in the interior of the state of Maranhão, Brazil. He received initial medical care at a local facility, where an attempt was made to perform facial osteosynthesis surgery by an oral and maxillofacial surgeon. The procedure was unsuccessful due to the inability to advance the nasotracheal tube, raising suspicion of tracheal stenosis, and a tracheostomy was therefore performed. The patient was subsequently transferred to a high-complexity hospital in the capital, where a facial CT scan revealed an obstruction at the subglottic level. He underwent treatment for facial fractures and bronchoscopy, which showed normal laryngeal and vocal cord anatomy but revealed the presence of a bone-like foreign body preventing the passage of the instrument. A laryngoscopy was then performed, and the object was removed using a long forceps. A repeat bronchoscopy demonstrated airway clearance at the subglottic level, with mucosal edema and hyperemia but no bleeding or perforation. The remainder of the tracheobronchial tree was unremarkable, and the instrument was withdrawn. **CONCLUSION:** This case highlights the importance of thorough evaluation in cases of facial trauma and the prompt diagnosis of foreign body obstruction to ensure a favorable patient prognosis and prevent potential complications. Moreover, the rapid availability of appropriate equipment is essential to allow swift intervention in response to intraoperative events.

06. SHEEHAN SYNDROME - CASE REPORT AND REFLECTIONS ON UNDERDIAGNOSIS

Filipe Rainan Costa Silva¹, Lara Luiza Pitombeira Rocha¹, Leandro Moreno da Cruz², Lucas Araújo dos Santos¹, Priscylla Vieira Vezzosi¹ and Gilvan Cortês Nascimento¹

¹Federal University of Maranhão

INTRODUCTION: Sheehan's syndrome (SS) is a neglected condition characterized by hypopituitarism secondary to ischemic necrosis of the pituitary gland resulting from massive hemorrhage in the peripartum period. Its manifestations range from nonspecific complaints such as weakness and fatigue to severe conditions resulting in coma or even death. Its progression is often slow, resulting in significant diagnostic delays. **OBJECTIVE:** This report aims to discuss the occurrence and underdiagnosis of Sheehan Syndrome in low-income regions and countries. This study was submitted and approved to the CEP under CAAE 87313225.6.0000.5086. **CASE DESCRIPTION:** M.I.T.G., 42 years old, female, with a history of anemia, severe asthenia, and nausea, was hospitalized in August 2023 due to a moderate pericardial effusion. Managed conservatively, the etiological investigation revealed central hypothyroidism with TSH of 2.22 μ UI/mL and free T4 of 3.82 ng/dL (12–22). Evaluation of the other pituitary axes confirmed hypopituitarism with associated corticotrophic deficiency (presenting episodes of nausea, arterial hypotension, and severe hyponatremia with sodium level of 116 mEq/L). The patient reported significant bleeding during her last cesarean delivery six years ago (requiring blood transfusion), was unable to breastfeed afterward, and has experienced irregular menstrual cycles since then, with intermittent episodes of hypotension and nausea. Imaging revealed herniation of the sellar diaphragm into the sella turcica, consistent with a partially empty sella appearance. Currently on levothyroxine and prednisone replacement therapy, presenting thyroid hormone levels within the normal range and significant symptomatic improvement, although oligomenorrhea persists. **CONCLUSION:** This case illustrates how SS, an indicator of lower obstetric quality, is still very prevalent in our setting, especially in states with lower socioeconomic indices, such as Maranhão. Furthermore, the delay in diagnosis reveals a lack of access to services and a lack of awareness about the disease, considering the history of significant blood loss, the inability to breastfeed, and oligomenorrhea. Thus, it is important to understand the importance of improving obstetric services in order to reduce new cases of the disease and to train health professionals to suspect a diagnosis based on reports of births with significant blood loss, avoiding late diagnosis of this condition.

07. EDUCATIONAL INTERVENTION ON GESTATIONAL SYPHILIS IN PRIMARY CARE IN RAPOSA - MA

Raquel Pedrosa de Sousa¹, Ana Júlia Santos Dutra¹, Giovanna Geyelle Costa Santos¹, Kawan de Assunção Silva Ferreira¹, Thaís Souza de Araújo¹, and Mara Izabel Carneiro Pimentel¹.

¹ Institute of Medical Education

INTRODUCTION: Syphilis is a sexually transmitted infection that, when acquired during pregnancy, can cause serious problems such as malformations and fetal death, despite its easy prevention and treatment. In the municipality of Raposa - MA, after more than a decade without notifications, three new cases were confirmed in 2024, reflecting a process of internalization of the disease and the need to strengthen prevention actions. **OBJECTIVE:** Therefore, an educational intervention was developed by medical students at UBS, with the objective of promoting awareness of gestational syphilis and contributing to the prevention of vertical transmission. **EXPERIENCE REPORT:** The project took place over eight weekly meetings. Techniques discussed in the classroom, such as pulmonary auscultation and accurate measurement of blood pressure, were exercised and consolidated in practice in real care to the population.

In addition to the technique, these visits also allowed direct contact with the challenges of SUS in a context outside the metropolis, broadening the view on the role of medicine in the community. In view of this interaction with the community and the recent cases of gestational syphilis in the municipality, which had not been reported for more than ten years, it was understood that it was necessary to extrapolate the theoretical content. It was not enough just to guide patients during the consultation: it was necessary to act actively to promote health education. **REFLECTION ON THE EXPERIENCE:** Experience has shown that health education, when combined with qualified listening and reception, is a powerful tool to prevent congenital syphilis. In addition, it strengthened the bond between students, community and unit staff, bringing us closer to the reality of medicine at SUS. **CONCLUSIONS AND RECOMMENDATIONS:** The experience demonstrated that the integration between students, health staff and users strengthen care in primary care and reinforces the importance of health education as a strategy for coping with congenital syphilis.

08. PROMOTION OF COMPREHENSIVE CHILD HEALTH CARE THROUGH INTERDISCIPLINARITY IN AN EXTENSION PROJECT AT A COMMUNITY NGO

Thalita Linda Alves Candeira¹, Luís Fernando Nogueira Furtado¹, Lara Luíza Pitombeira Rocha¹, Jéssica Cristine da Silva Conceição¹, Karylaine Castro Andrade¹ and Mônica Elinor Alves Gama¹.

¹ Federal University of Maranhão

INTRODUCTION: Comprehensive child health care involves promoting physical, mental, emotional, and social well-being, and this process must be conducted by an interdisciplinary team. The joint work of professionals in medicine, nursing, psychology, and nutrition allows a broadened and complementary perspective on childhood needs, especially in vulnerable contexts. The articulation between different fields of knowledge contributes to more effective and humanized interventions, aligned with the principles of integrality and equity of the Brazilian Unified Health System (SUS). **OBJECTIVE:** To report the experience of an interdisciplinary action aimed at promoting comprehensive child health care for children in situations of social vulnerability, developed through an extension project of the Academic Pediatric League (LAPED) at a Non-Governmental Organization (NGO) located in São Luís (MA), Brazil. **EXPERIENCE REPORT:** The activity was promoted by LAPED — an interdisciplinary academic league involving students from the courses of Medicine, Nursing, Psychology, and Nutrition. The action took place at an NGO that develops socio-educational activities with children from the community, offering school support, cooking workshops, swimming lessons, among other initiatives. To provide comprehensive care, the team was divided into four groups, each representing its area of expertise. The Medicine group addressed the milestones of child development and discussed health promotion practices. Nursing emphasized the importance of vaccination and maintaining an up-to-date vaccination schedule. Psychology conducted educational activities on excessive screen time in childhood and its implications for behavior and healthy development. Nutrition worked on guidance regarding healthy eating in childhood, fostering dialogue with children and their caregivers. **REFLECTION ON THE EXPERIENCE:** The action proved to be highly enriching for both the students involved and the community served. The interest and active participation of the children and their caregivers in the proposed activities highlighted the relevance of the topics addressed.

Integration among different fields of knowledge enhanced the effects of the intervention, demonstrating in practice the benefits of interdisciplinary work in pediatric care. Furthermore, the students were able to experience the university's social commitment to promoting health in community settings. **CONCLUSION:** The experience demonstrated that comprehensive child health care is more effective when conducted interdisciplinarily, respecting the specificities of each profession and promoting the complementarity of knowledge. Extension work in this context reaffirms the university's role as a promoter of citizenship, applied knowledge, and social transformation.

Poster Session

CASE REPORTS AND EXPERIENCE REPORTS

01. PROMOTION OF HEALTHY HABITS IN EARLY CHILDHOOD: PREVENTION OF OBESITY IN THE SCHOOL CONTEXT

Linne Kyara Lobato de Oliveira Teixeira¹, Pedro Lucas Araujo Pinheiro¹, Ághata Patrielly Santos Soares¹ and Alexandro Guimarães Reis¹.

¹ Afya Medical Sciences College

INTRODUCTION: Childhood obesity is a growing public health challenge, affecting the physical, emotional, and social well-being of millions of children worldwide. In Brazil, its prevalence is particularly concerning among children aged 5 to 9 years, emphasizing the need for preventive measures, especially in the school environment. Childhood is a critical period for the formation of habits that influence adulthood, giving schools a central role in health promotion and the prevention of chronic diseases. **OBJECTIVE:** This study aims to report the experience of a university extension project focused on the prevention of childhood obesity at a school in the interior of Maranhão. **EXPERIENCE REPORT:** The university extension project was carried out at Centro Educacional Menino Jesus, involving eleven medical students and encompassing educational activities and practical workshops, such as lectures and playful sessions addressing balanced nutrition, the food pyramid, and the importance of physical activity. The workshops were divided into two components: in the "Eating Well" module, children learned to classify healthy and unhealthy foods; in the practical module, they participated in games such as sack races, jump rope, and running competitions. The artificial intelligence tool ChatGPT was used as an organizational aid in the preparation of this abstract. The project was submitted to the Research Ethics Committee and is currently under evaluation, awaiting the issuance of the formal approval with the respective reference number. **REFLECTION ON THE EXPERIENCE:** The results showed strong engagement from the children and an increased awareness of nutrition and health. The activities promoted understanding of the risks associated with excessive consumption of ultra-processed foods and encouraged positive changes within the family environment as well. The final evaluation indicated a significant improvement in the participants' level of knowledge. **CONCLUSIONS AND RECOMMENDATIONS:** The experience demonstrated that educational work in childhood goes beyond knowledge transmission, providing an opportunity for practical engagement and the development of critical awareness. The partnership between the school, families, and the university was essential for the project's success, showing that initiatives of this nature can promote lasting changes and effectively contribute to the prevention of childhood obesity.

02. HEALTH EDUCATION AND SELF-CARE PROMOTION AMONG WOMEN EXPERIENCING HOMELESSNESS: REPORT OF AN EXTENSION ACTIVITY

Samia Raysa Sales Rodrigues¹, Yasmin Andrade Sampaio¹, Maria Beatriz Soares Vieira¹, Lara Luiza Pitombeira Rocha¹ and Adriana Lima Dos Reis Costa¹.

¹ Federal University of Maranhão.

INTRODUCTION: Women experiencing homelessness face vulnerabilities marked by broken social ties, exclusion, stigma, and limited access to basic rights. They are exposed to violence, substance abuse, and invisibility within health services, which worsens illness and hinders preventive practices. In addition to structural barriers, these women face stigmas that undermine their citizenship and access to care. In this context, outreach initiatives that promote active listening, health education, and self-esteem enhancement become essential. **OBJECTIVE:** To report an extension activity with women experiencing homelessness, carried out by medical students in São Luís (MA). **EXPERIENCE REPORT:** The activity was carried out by a medical students' extension project in partnership with a social assistance center that supports women experiencing homelessness. The action began with an educational lecture, delivered in accessible language, on cervical cancer, emphasizing prevention, warning signs, and the importance of screening. The methodology encouraged the women's active participation, providing space for questions and experience sharing. At the end, a display of clothing, shoes, and bags previously collected through donations was organized, allowing the women to choose items according to their needs—reinforcing comprehensive care and the promotion of self-esteem. **REFLECTION ON THE EXPERIENCE:** The initiative enabled qualified and compassionate listening, essential for addressing sensitive topics in contexts of vulnerability. The experience raised the students' awareness of the challenges faced by these women and highlighted health education as a tool for empowerment. Contact with this reality strengthened the humanized training of future professionals and broadened their understanding of health as both a right and a practice of social justice. **CONCLUSIONS AND RECOMMENDATIONS:** The experience highlighted the potential of extension initiatives to transform realities and to train professionals who are more sensitive to social inequities. It is recommended that similar initiatives be continued and expanded, integrating prevention, solidarity, and educational practices, thereby contributing to health promotion and the empowerment of vulnerable populations.

03. MANAGEMENT OF A FIBROUS TUMOR IN A 66-YEAR-OLD PATIENT: A CASE REPORT

Pedro Marcondes Bezerra Fernandes¹, Alexandre Porto Pereira Galdez², Elias Amorim², Mariana Chaves Mendonça¹, Melissa dos Santos Araujo¹, and Bruno Mileno Magalhães de Carvalho¹.

¹ Federal University of Maranhão.

² Tarquínio Lopes Filho General Hospital.

INTRODUCTION: Fibrous Tumors (FT) are commonly formed due to abnormal differentiation of fibroblasts, with the pleural location being the most frequent site. They account for less than 5% of all pleural tumors, with an estimated incidence of 1 to 2 cases per million inhabitants per year. These formations can reach considerable dimensions, causing symptoms related to compression, or they may remain asymptomatic. The prognosis is often favorable, with 80% of cases being benign in nature, while approximately 20% may exhibit

malignant behavior. This study was approved by the Research Ethics Committee under opinion number 76634522.0.0000.5087, as recorded in the Certificate of Presentation for Ethical Consideration.

OBJECTIVE: To report the case of a 66-year-old female patient with a rare FT in the right hemithorax, without comorbidities, with a history of prior myomectomy and recurrent pleural effusions, as well as the clinical management adopted in this case. **CASE DESCRIPTION:** A 66-year-old female patient with a history of recurrent pleural effusions initially underwent a chest X-ray, which revealed a mass in the right hemithorax. Subsequently, a chest computed tomography scan demonstrated a 17-centimeter mass in the same region. A guided biopsy of the lesion, followed by immunohistochemical analysis, confirmed the diagnosis of a fibrous pleural tumor. The patient was admitted in good general condition, laboratory tests were requested, and she was referred for an exploratory thoracotomy. Immunohistochemical analysis of the biopsy specimen confirmed the diagnosis of a fibrous tumor. Complete surgical excision of the mass was performed. However, in the postoperative period, the patient developed refractory cardiogenic shock, attributed to abrupt decompression caused by the removal of the large tumor mass, which suddenly alters preload — a phenomenon previously described in resections of large thoracic masses. She was admitted to the Intensive Care Unit (ICU) in critical condition but showed progressive clinical improvement and was discharged on the tenth postoperative day. **CONCLUSION:** This case highlights the importance of identifying and investigating neoplasms. Patient prognosis primarily depends on the tumor's histological type and the complications associated with the clinical condition. The favorable outcome underscores the significance of timely diagnosis and treatment, which serves as a key predictor of patient prognosis.

04. GALACTORRHEA IN MEN AS A WARNING SIGN FOR MACROPROLACTINOMA: CASE REPORT

Mikao Carreiro Silva¹, Anna Victoria Marques Sousa Pirajá¹, Mayara Regina Fontinele Rocha¹, Osmar Gustavo de Santana Lima¹, and Gilvan Cortês Nascimento¹.

¹ Federal University of Maranhão.

INTRODUCTION: Hyperprolactinemia is the most common hypothalamic-pituitary dysfunction, accounting for approximately 13% of secondary amenorrhea cases, while it is rare in men. Prolactinomas are the most common pathological cause, with approximately 500 cases per million people. They often cause hypogonadism with oligoamenorrhea in women and erectile dysfunction in men. Headache and visual disturbances may occur, especially in macroprolactinomas. Galactorrhea, common in women, is a nonspecific finding when isolated and quite unusual in men. **OBJECTIVE:** This report aims to discuss galactorrhea in men as a highly specific clinical sign for hyperprolactinemia. This report is part of a study approved by the Research Ethics Committee under opinion no. 7910329. **CASE DESCRIPTION:** G.N.G., 33 years old, had been suffering from severe right parietal headache for about nine years, progressing to galactorrhea on expression five years ago and exacerbation of the condition in the last three months. During an emergency evaluation for severe headache, a CT scan revealed a 2.5 x 2.2 cm lesion suggestive of a pituitary macroadenoma. He reported reduced libido on directed questioning and denied erectile dysfunction, visual field alterations, or continuous medication use. Physical examination revealed a BMI of 30 kg/m², BP of 120 x 80 mmHg, G5P5 genitalia, and frank bilateral galactorrhea upon nipple expression. Laboratory tests showed prolactin of 695 ng/mL (ref.: ≤

20 ng/mL), total testosterone of 92.2 ng/dL, FSH of 2.03 UI/L and LH of 1.66 UI/L, evidencing hypogonadotropic hypogonadism. Thyroid function was compromised with TSH of 0.74 mUI/mL, FT4 of 0.8 ng/dL (ref.: 0.9-1.7 ng/dL) and cortisol of 11.3 µg/dL. Creatinine of 0.86 mg/dL. Treatment was initiated with prednisolone 3 mg/day, levothyroxine 100 µg/day and cabergoline 1 mg/week. After 10 weeks, upon reevaluation, the patient reported reduced headache, improved libido and reduced galactorrhea on nipple expression. His prolactin level was 23 ng/mL and FT4 was 1.3 ng/dL, with the medical management maintained. **CONCLUSION:** This case report indicates that galactorrhea in men, although uncommon, should be perceived as an important warning sign for a potentially serious etiology such as macroprolactinoma, once other common causes of hyperprolactinemia have been ruled out. The presence of this finding, associated with neurological symptoms, reinforces the need for hormonal investigation in men. Recognizing galactorrhea early can accelerate diagnosis, enable targeted therapy, and reduce associated complications.

05. CITIZEN RESCUER: TRANSFORMING LAYPEOPLE INTO RESCUERS THROUGH FIRST AID TRAINING IN A RESTAURANT

Jorge Fernando Lopes da Cunha¹, Maria Beatriz Soares Vieira¹, João Victor Cunha Silva¹, Davi Nunes Marques¹, Isabela Marinho da Cunha¹, João Pedro Belaglovis Castelo Branco¹, Santiago Servin¹.

¹ Federal University of Maranhão

INTRODUCTION: Practical cardiopulmonary resuscitation (CPR) training for laypeople increases motivation and learning effectiveness, with evidence suggesting that even the use of mixed reality enhances compression depth and training satisfaction. Layperson training can expedite the initiation of CPR and raise hospital admission rates for out-of-hospital cardiac arrests. **OBJECTIVE:** To report on the first aid training of laypeople (restaurant employees), focusing on the receptivity and educational impact. **EXPERIENCE REPORT:** The "Cidadão Socorrista" (Citizen Rescuer) project, promoted by an academic medical league, provides BLS training to the lay public. On February 25, 2025, four medical students trained 22 restaurant employees. The reception was positive; participants reported risk situations that could have been better managed with prior preparation. As they work in a culinary environment, they are exposed to risks such as choking and burns. The training included theoretical lessons on CPR, choking maneuvers, and initial care for burns, followed by practical stations for adult and pediatric CPR, choking simulations, and initial management. Slides prepared by the students with faculty supervision and eight CPR manikins (four adult and four pediatric) were used. **REFLECTION ON THE EXPERIENCE:** The medical students are continuously trained in BLS, CPR, burn care, and choking maneuvers to become knowledge multipliers in community actions. Restaurants present a high risk for thermal accidents: studies indicate that kitchen workers may sustain up to 24% of burns related to hot oil and heated surfaces. Food-related choking is a frequent cause of accidental death, being the fourth leading cause of unintentional death in the United States, with 4 to 5 thousand annual cases. These data reinforce the importance of systematic educational actions in BLS, choking relief, and burn prevention, not only for immediate response but also to reduce complications and mortality. The literature recommends periodic training, integration with safety protocols, and stimulating laypeople's active role. **CONCLUSIONS AND RECOMMENDATIONS:** The experience proved feasible and well-accepted. It is recommended

to institutionalize periodic educational actions with a practical approach to BLS and encourage the multiplying role of laypeople within an occupational context.

06. RECREATIONAL AND EDUCATIONAL ACTIVITY WITH SHADOW THEATER TO PROMOTE ORAL HEALTH IN CHILDREN WITH CANCER: EXPERIENCE REPORT

Yasmin Andrade Sampaio¹, Pedro Massagli Yamada¹, Miguel Ferreira Leite¹, Jilmario Gomes de Santana Junior¹, Monica Cavalcante Santana¹, Isabela Marinho da Cunha¹, and Jorge Antonio Meireles Teixeira¹.

¹ Federal University of Maranhão

INTRODUCTION: Pediatric patients undergoing cancer treatment face challenges that go beyond the disease itself, mainly due to oral complications such as mucositis, xerostomia, and gingivitis. These conditions cause pain, discomfort, and infections, compromising quality of life and treatment adherence. Preventive and educational efforts by multidisciplinary teams are essential to minimize these impacts and promote well-being. Playful strategies, such as shadow theater, facilitate children's understanding and engagement with oral hygiene, making care more welcoming. **OBJECTIVE:** Report on the experience of a multidisciplinary extension project that promoted oral hygiene for children with cancer, using shadow theater as a playful educational strategy in the hospital environment. **EXPERIENCE REPORT:** The initiative was developed by students studying medicine, dentistry, nursing, psychology, and nutrition, who were trained to make shadow theater materials such as screens, puppets, and models. The intervention had two stages: an educational presentation with models and puppets demonstrating the step-by-step process of brushing and flossing, emphasizing the importance of oral hygiene during cancer treatment; followed by a playful shadow theater performance, which facilitated the engagement and understanding of children of all ages, even in the hospital environment with its limitations. **REFLECTION ON THE EXPERIENCE:** Shadow theater proved effective in capturing children's attention, making the transmission of health information more accessible and appropriate for the pediatric hospital environment. The experience strengthened the students; multidisciplinary work, promoting teamwork and skills in humanized care. It also facilitated bonds with patients and family members, which are essential for continuity of care. In addition, it sensitized students to empathy and child-centered care, enriching their academic and professional training. **CONCLUSIONS AND RECOMMENDATIONS:** The use of shadow theater proved to be an accessible, innovative, and efficient approach to promoting oral hygiene in children with cancer. Its adoption is recommended in pediatric hospitals and other health facilities, encouraging multidisciplinary work and the use of playful resources to improve the quality of life of these patients, promoting more humanized and comprehensive care.

07. THE PROMOTION OF ORAL HEALTH: AN EXPERIENCE REPORT OF A PLAYFUL AND THEATRICAL APPROACH

Miguel Ferreira Leite¹, Hândrya Karla Martins Gomes¹, Melody Roberta Bitarães Rocha¹, and Jorge Antônio Meireles Teixeira¹.

¹ Federal University of Maranhão

INTRODUCTION: Oral health is a fundamental aspect of promoting individual health, and its fostering during childhood is essential for a child's development, directly influencing their quality of life, nutrition,

and self-esteem. Moreover, establishing oral hygiene habits early in life is a protective factor against future diseases. This experience report describes an activity focused on health education, using theater as an educational tool. **OBJECTIVE:** It aims to narrate the experiences of undergraduate students during the extension activity and reflect on its contributions to the academic and social development of the participants. **EXPERIENCE REPORT:** The health extension project, developed by a public university in the state of Maranhão, promoted an educational activity directed at children aged five and six years in a public school. The action was based on theatrical performance as an educational strategy to teach about the well-being promoted by oral hygiene. With this purpose, a theatrical play was performed, addressing the topic in a playful and engaging way to capture the attention of the children. Finally, after the performance, an interactive discussion was held with the audience to reinforce the key points of the play and provide guidance on the correct way to perform oral hygiene. **REFLECTION ON THE EXPERIENCE:** The activity proved to be effective in promoting audience engagement. In addition, theater showed itself to be an effective tool for health education, serving as an adaptation of academic knowledge into simple language appropriate for the target age group, facilitating learning and sparking the children's interest. Interaction with the children reinforced the importance of playful and accessible approaches. Furthermore, by offering an interactive and participatory experience to the students, the activity enabled an exchange of experiences and fostered a bond between the students and the community, thus playing an important role in academic training and in the early integration of students into community health contexts. **CONCLUSIONS AND RECOMMENDATIONS:** The university extension project demonstrated the effectiveness of theater as a playful and educational resource for promoting children's oral health. The activity supported the assimilation of content by the children and reinforced self-care practices. Additionally, it significantly contributed to the students' academic and personal development. Given the results obtained, its continuation and replication in other school and community settings is recommended.

08. SARCOPENIA AND FALL PREVENTION IN THE ELDERLY: AN EXPERIENCE REPORT WITH HEALTH EDUCATION AND THEATER

Lara Carvalho Ferreira Medeiros¹, Leonice Maria Nunes Coimbra¹, Sophie Marie Machado Aragão¹, Pedro Massagli Yamada¹ and Jorge Antônio Meireles Teixeira¹.

¹ Federal University of Maranhão.

INTRODUCTION: Sarcopenia is a geriatric disease characterized by the progressive loss of skeletal muscle mass and strength. Currently, it constitutes a frequent and difficult-to-diagnose health problem that can lead to potential consequences, such as mobility limitations, inability to complete daily activities, and an increased risk of falls and hospitalizations. Although there is no unified approach to treatment, physical activity is known to be one of the main ways to prevent this condition and improve the quality of life of these individuals. **OBJECTIVE:** To describe a real-life situation experienced and propose a reflection on the importance, challenges, and strategies in the prevention and treatment of sarcopenia. **EXPERIENCE REPORT:** A health outreach project from a public institution in Maranhão, Brazil, which employs theater as a means to educate about health, carried out an action about sarcopenia for the elderly, organized in three stages. First, a playful theater performance introduced sarcopenia in an accessible and interactive way to 35 participants. Next, a health education session deepened the topic using an informative banner,

addressing the concept, diagnosis, risk factors, and prevention of the condition. The event concluded with the practice of physical exercises focused on muscle strengthening, in addition to breathing and balance techniques, offering the elderly concrete tools to reduce the risk of falls in their daily routine, allowing for a comprehensive approach to the health of this assisted group. **REFLECTION ON THE EXPERIENCE:** The action provided a significant experience in health education for the elderly, highlighting the value of playful and accessible methodologies, with theater being an approach that favored engagement and understanding of the theme. Faced with challenges such as low educational level and functional limitations, it was necessary to adapt the language and actions, requiring sensitivity from the team. The experience also reinforced the importance of listening, interdisciplinarity, and the elderly's leading role in their care. **CONCLUSIONS AND RECOMMENDATIONS:** The activity demonstrated that the articulation between playful methodologies and technical-scientific information favors the engagement and assimilation of complex content. Therefore, the adoption of interdisciplinary, culturally sensitive, and elderly-centered approaches is recommended, positioning them as active subjects in their care, in order to promote healthy aging, autonomy, and quality of life for this population.

09. EXPERIENCE REPORT: APPLICATION OF THE CLINICAL-FUNCTIONAL VULNERABILITY INDEX IN INSTITUTIONALIZED OLDER ADULTS

Andrea Sodr  Gon alves¹, Nicholas Oliveira de Menezes¹, Carlos Eduardo Brand o Moura¹, Cau  Rocha Perez¹, Maria Victoria Pessoa¹, Jacira do Nascimento Serra¹.

¹ UNDB University Center.

INTRODUCTION: Population aging imposes significant challenges to the organization of health services, especially with regard to comprehensive and continuous care for the elderly, especially those living in Long-Term Care Institutions for the Elderly (LTCF). The multiple physical, cognitive, and psychosocial changes that accompany aging make it essential to use instruments that allow a broad, systematic, and sensitive assessment of the needs of this population. In this context, the Clinical-Functional Vulnerability Index (IVCF-20) stands out as a rapid screening instrument for multidimensional assessment of the elderly, focusing on the early identification of weaknesses in different health domains (Moraes et al. (2016). The IVCF-20 contemplates physical, functional, cognitive and psychosocial aspects, allowing the stratification of risks in an agile and effective way. Recognizing its clinical usefulness and its applicability in Primary Care, the Ministry of Health officially incorporated the IVCF-20 into the guidelines of the Unified Health System (SUS) as a recommended instrument for the assessment of the elderly population, especially in the monitoring of the Family Health Strategy (Brasil, 2020). Its application has been consolidated as a fundamental practice to support clinical decisions, plan personalized interventions, and ensure greater quality of life and autonomy for the elderly — especially in institutionalization contexts.

OBJECTIVE: The objective of this activity was to apply the IVCF-20 to elderly residents of a LTCF linked to the Dr. Jos  Carlos Macieira Health Center, with the purpose of identifying the degree of clinical-functional vulnerability and guiding personalized care interventions. The action also aimed to promote integration between teaching, service and community, through a practical experience of multidimensional assessment in care for the elderly. **EXPERIENCE REPORT:** The activity took place in a Long-Term Care Institution for the Elderly (ILPI), as part of the university extension axis linked to the

curricular component of Primary Health Care (PHC), under the supervision of the preceptor, a nurse, a member of the Family Health Strategy of a Health Center in S o Lu s/MA, responsible for the technical and pedagogical guidance of the students. At the beginning of the day, the group of students from the third period of the Medicine course, previously trained in a theoretical class on the use of the Clinical-Functional Vulnerability Index – IVCF-20, promoted by the Geriatrics and Gerontology Center (NUGG) of UFMG and complemented by a directed study, arrived at the institution and was welcomed by some elderly people in different situations. Some were bedridden in their rooms, while others participated in group leisure activities. The application of the IVCF-20, a screening instrument validated by the Unified Health System (SUS) to identify the degree of clinical and functional vulnerability of elderly people, was conducted individually, with qualified listening and a humanized approach. It was essential to consider not only the responses of the elderly themselves, but also the reports of the caregivers, which contributed significantly to the real understanding of the functionality and limitations of each resident. This care reinforced the importance of a comprehensive and contextualized view of aging. In addition to the application of the IVCF-20, vital signs such as blood pressure, Body Mass Index (BMI) and basic general physical examination were measured. All approaches strictly followed biosafety protocols and the use of Personal Protective Equipment (PPE). The choice of the elderly evaluated was based on clinical criteria of stability and communication capacity, in addition to their verbal consent. The action was strictly assistential, with no intention of research or scientific dissemination, and therefore did not require submission to the Research Ethics Committee, as established in Resolution No. 510/2016 of the National Health Council (CNS). **REFLECTION ON THE EXPERIENCE:** Five elderly residents of the Casa Lar were evaluated, all classified as frail according to the score obtained from the application of the IVCF-20. The classification of frailty was based on the total score of the instrument, according to parameters established by the Ministry of Health, and the sum of the answers to the 20 items of the questionnaire was considered. Among the main findings were cognitive impairment, mobility difficulties, presence of polypharmacy, and absence of a family support network. These factors have increased the risk of falls, malnutrition, and functional decline. **CONCLUSIONS AND RECOMMENDATIONS:** The application of the IVCF-20 in institutionalized older adults provided a rich and formative experience, combining clinical practice with a humanized approach, in line with the principles of the SUS. The instrument proved to be accessible, efficient, and capable of guiding specific conducts in the face of the identified vulnerabilities. In addition to technical improvement, the activity strengthened the development of skills essential to medical training, such as empathy, qualified listening and social responsibility. By integrating the workload of the Primary Health Care discipline, with faculty supervision, the action reaffirmed the value of university extension as a privileged space for meaningful learning. Because it does not have an investigative character or scientific publication objective, the activity did not require submission to the Ethics Committee, according to Resolution No. 510/2016. Finally, the experience reaffirms the importance of multidimensional assessment in the care of the elderly and highlights the transformative role of direct contact with the reality of health services in the formation of future professionals who are more sensitive, ethical and prepared.

10. ROBOTIC REPAIR OF DIASTASIS RECTI ABDOMINIS: A 5-YEAR EXPERIENCE AT A PRIVATE HOSPITAL IN SÃO LUÍS, MARANHÃO, BRAZIL

Cauã Vieira Launé Rodrigues¹, Higraine Vitória Bispo Carvalho¹, Hugo Gabriel Rocha Castro¹, José Ribamar Oliveira Lima¹, Thiago Vinicius de Araújo Costa¹ and Roclides Castro de Lima¹.

¹ Florence University Center.

INTRODUCTION: Diastasis Recti Abdominis (DRA) is the muscular separation of the linea alba with functional and aesthetic implications, where severe cases require surgical correction. Given this, robotic surgery emerges as a minimally invasive approach, aiming to optimize outcomes compared to the conventional technique. **OBJECTIVE:** To demonstrate the experience and benefits of using the robotic technique for the correction of diastasis recti abdominis in a case series. **EXPERIENCE REPORT:** Diastasis recti abdominis requires surgical correction via a conventional or robotic approach. Although the robotic operative time (113.5–240 min) may exceed the conventional time (approx. 135 min), this variation is compensated by significant post-operative benefits. Notably low infection rates are observed in robotic surgery, contrasting with a higher incidence in open surgery, a direct reflection of reduced tissue trauma, which substantially decreases patient morbidity. Post-operative recovery is significantly faster, with less pain, bikini line scars, and a median hospital stay of one day, demonstrating a substantial improvement in the patient experience and allowing a quicker return to daily activities. Additionally, robotics permits broader and more effective dissection, concomitant repair of hernias via small incisions, superior aesthetics, and extremely low recurrence, indicating a more robust and complete correction that transcends the mere resolution of the diastasis. **REFLECTION ON THE EXPERIENCE:** The construction of this work allowed us to understand, in a practical and critical way, the advances of robotic surgery in the correction of diastasis recti abdominis. By comparing the approaches, it was evident how technology can positively influence patient recovery, comfort, and results. This experience reinforced the importance of combining scientific knowledge with innovation, always valuing the procedure that offers the greatest overall benefit to the patient. **CONCLUSIONS AND RECOMMENDATIONS:** Robotic correction is a promising treatment modality for diastasis recti abdominis. Additional analyses using large data sets will confirm the advantages and feasibility of robotic rectus diastasis repair.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ABSTRACTS OF THE
INTERNATIONAL
STUDENTS' CONGRESS OF
BUCHAREST (2024)

IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

Abstracts of the International Students' Congress of Bucharest (2024)

Poster Session

ORIGINAL STUDIES

01. FREQUENCY OF CATALASE AND SUPEROXIDE DISMUTASE GENE VARIATIONS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

Anastasija Kostic¹, Milica Stanojkovic², Ana Ivic²

Prof. Tatjana Jevtovic Stoimenoc³

¹Laboratory for Functional Genomics and Proteomics, Faculty of Medicine, University of Nis, Serbia, ²Faculty of Medicine, University of Nis, Serbia,

³Department of Biochemistry, Faculty of Medicine, University of Nis, Serbia

INTRODUCTION: Systemic lupus erythematosus (SLE) is a disease of inflammatory and autoimmune origin in which genetic predisposition plays a significant role in etiopathogenesis. Previous studies have shown that the parameters of oxidative stress, that is lipid peroxidation, oxidative damage of proteins, nucleic acids significantly increased in patients with SLE. The aim of our study was examination of the frequency of gene polymorphisms of the antioxidant enzymes catalase (rs1001179 and rs7943316) and superoxide dismutase (rs4880) in patients with systemic lupus erythematosus. **MATERIALS AND METHODS:** The study included 157 subjects, 65 subjects suffering from systemic lupus erythematosus and 92 healthy subjects. The following genetic polymorphisms were determined on the DNA samples: CAT A-21T (rs7943316), CAT C-262T (rs1001179), SOD Ala16Val (rs4880). For the determination of gene polymorphisms, the DNA amplification chain reaction method was used, followed by the analysis of restriction fragment length polymorphism. **RESULTS:** The distribution of rs4880 polymorphism genotypes showed statistically significant results between SLE patients and healthy subjects. Analysis of the distribution of rs1001179 and rs7943316 polymorphism genotypes did not show statistically significant differences between the examined groups. **CONCLUSION** Oxidative stress, as one of the main mechanisms in the pathogenesis of autoimmune diseases such as lupus, can also occur as a result of the inactivity of mitochondrial superoxide dismutase, which remains in the mitochondrial membrane due to structural disorders that occur as a result of the presence of the Val allele in the MnSOD gene.

02. COMPARATIVE ANALYSIS OF THE HISTOMORPHOLOGICAL CHARACTERISTICS OF FETAL AND ADULT CARDIAC MUSCLE

Ana-Marija Jokić¹

Assoc. Prof. Ivan Čapo, MD, PhD^{1,2}, Assoc. Prof. Jelena Ilić Sabo, MD, PhD^{1,2}

¹Faculty of Medicine, University of Novi Sad, ²Center For Pathology and Histology of the University Clinical Center of Vojvodina

INTRODUCTION: The heart is a muscle pump that distributes blood throughout the body. The myocardium, made up of heart muscle, occupies the middle and thickest part of the heart wall. It consists of endomesium surrounding contractile, conducting, and endocrine cardiomyocytes. The aim of our study was comparative analysis of the histomorphological characteristics of fetal and adult heart muscle: nuclei shape, presence of multinucleated fibers, presence of lipofuscin and surface of the endomesium. **MATERIALS AND METHODS:** The analysis included 26 fetal heart muscle samples autopsied after spontaneous or induced abortion, as well as 26 adult heart muscle samples. The sample for morphological examination was treated in a systematic manner, viewed with a ZEISS Axioscope 5 light microscope, and shot with a ZEISS AxioCam 105 color camera. **RESULTS:** An analysis of the nucleus shape parameter revealed a moderate association between the type of sample (fetal or adult heart muscle) and the nucleus shape, but a significant correlation with the type of sample was demonstrated for the presence of lipofuscin. While the endomesium surface differs significantly in adult and fetal cardiac muscle samples. **CONCLUSION:** Fetal heart muscle samples are characterized by a spindle-shaped nucleus, with a large number of binucleated fibers, while the presence of lipofuscin and the amount of the endomysium is significantly larger in adult samples.

03. CAN SOCIAL MARKETING HAVE AN IMPACT IN MELANOMA PREVENTION?

Beatrice-Corina Tataru¹, Assist. Lect. Marinela Filofteia Ioachim, MD, PhD¹

Assoc. Lect. Andra Victoria Radu, PhD¹

¹Carol Davila University of Medicine and Pharmacy

INTRODUCTION: Social marketing has emerged as a powerful tool in health promotion by increasing the adoption of healthy behaviors. As melanoma has become a public health issue, it is necessary to use social marketing techniques to educate the population regarding the prevention and early diagnosis of this condition. The study aims to evaluate the impact of a social marketing campaign whose main objective is the prevention of malignant melanoma and to assess the comprehension of information presented in the print material.

MATERIALS AND METHODS: The research methodology consisted of designing an analytical, observational study. The study population was made up of a sample of 150 subjects, patients from a public hospital's dermatovenerology department. The participants met the following inclusion criteria: they are at least 18 years old, they speak Romanian, they completed an informed consent. The study was conducted over a period of 2 weeks. During this time, participants were provided with an informational printout presenting the ABCDE technique for nevi examination. Subsequently, a questionnaire was administered using the Google Forms application online. The questionnaire consisted of 33 questions. **RESULTS:** 96% of patients believed that increasing their level of medical knowledge in the field of dermatology would be beneficial to them. Over 90% of participants agreed that the print contained a significant level of information for effectively conveying the message. 96% found the message of the print useful. 94% considered themselves more informed after viewing the print, and 92.7% wished to see similar prints in the future. Additionally, 97.3% agreed that the message of the print is convincing, and 86% stated that they intend to seek a dermatological consultation after viewing the print. **CONCLUSION:** The social marketing campaign successfully impacts participants' intention to seek medical care, in this study almost all responders stating that they would seek a specialist consultation after viewing the print. The informational print contains a sufficient level of information to effectively communicate the message, is persuasive, and includes images that are both visually satisfactory and concordant with the message, thus being appreciated by patients as useful.

04. COMPARATIVE ANALYSIS OF HISTOMORPHOLOGICAL CHARACTERISTICS OF FETAL AND ADULT SKIN

Filip Kapor¹, Aleksandra Oluski¹

Scientific Coordinator: Assoc. Prof. Ivan Capo², Assoc. Prof. Jelena Ilic Sabo²

¹Faculty of Medicine University of Novi Sad

²Center for Pathology and Histology of the University Clinical Center of Vojvodina, Faculty of Medicine University of Novi Sad.

INTRODUCTION: The skin, our body's largest organ, plays vital role in shielding, metabolism, temperature regulation, sensation, and waste removal. Embryonically, the skin consists of epidermis that originates from ectoderm, dermis that originates from mesoderm and hypodermis that separates skin from the bones and muscles.

MATERIALS AND METHODS: The study was conducted at the Center for Pathology and Histology of the Clinical Center of Vojvodina. The obtained material was observed under a ZEISS Axioscope 5 light microscope. Microphotographs were analyzed using Image J software, and for statistical analysis, we used Microsoft Excel and BM SPSS. **RESULTS:** Keratinization is more pronounced in adults compared to fetal samples and increases with gestational age. Parakeratinization differs significantly between adult and fetal samples, but not among fetal groups. Thickness of the epidermis also shows statistically significant differences among groups, while the dermis does not show statistical significance. Melanin and the presence of adnexa in the epidermis are also influenced by gestational age and show significant differences between fetal and adult samples. **CONCLUSION:** There are significant histomorphological differences between fetal and adult skin in terms of keratinization, epidermal thickness, melanin presence, and the presence of adnexa.

05. **DYSREGULATION OF GENES INVOLVED IN THE LONG-CHAIN FATTY ACID TRANSPORT IN PANCREATIC DUCTAL ADENOCARCINOMA**

Anastasia-Maria Dobre¹, Radu-Cristian Poenaru^{1,2}, Maria Dobre^{1,2}

Elena Milanesi, Assistant Lecturer^{1,2}

¹Carol Davila University of Medicine and Pharmacy,

²Victor Babes National Institute of Pathology

INTRODUCTION: Pancreatic Ductal Adenocarcinoma (PDAC) is a type of cancer characterized by great severity, low survival rate and limited range of treatments. Modifications in lipid metabolism such as aberrant de novo lipid synthesis and reprogrammed lipid metabolism have been theorized to be linked with the evolution of this malignancy. The aim of this study is the identification of the possible involvement of lipid metabolism in PDAC by analyzing the expression level of the most relevant genes implicated in the long-chain fatty acid import into cell, in both tumoral and non-tumoral tissues. **MATERIALS AND METHODS:** The gene expression analysis of FASN, CD36, SLC27A1, SLC27A2, SLC27A3, SLC27A4, SLC27A5, ACSL1, and ACSL3 was conducted by qRT-PCR in 24 PDAC tissues and 11 samples from non-tumoral pancreatic tissues. The nonparametric Mann-Whitney test was used to assess the statistical differences between the two groups and a p-value of <0.05 and a fold change (FC) value of ≤ 0.5 and ≥ 2 were chosen to identify the significant dysregulation between the two groups. **RESULTS:** The investigation revealed significant upregulation of three fatty acid transporters: SLC27A2 (FC = 5.66; p = 0.033), SLC27A3 (FC = 2.68; p = 0.040), and SLC27A4 (FC = 3.13; p = 0.033) and two long chain acyl-CoA synthetases: ACSL1 (FC = 4.10; p < 0.001), and ACSL3 (FC = 2.67; p = 0.012) in the tumoral tissue compared to the non-tumoral tissue. We also found the over-expression of SLC27A3 (FC = 3.28; p = 0.040) comparing seventeen patients presenting lymph node invasion with seven patients without. **CONCLUSION:** Our findings highlight the dysregulation of genes involved in the long-chain fatty acid import into cell in PDAC tissue. The results may be useful for inspiring extensive studies in vitro and in vivo to better understand the molecular mechanism underpinning the relation between lipid metabolism and PDAC. This research was funded by the Romanian Ministry of Research, Innovation and Digitization under grant n. PN 23.16.02.04

**Poster Sessions
REVIEWS**

01. **DYSREGULATION OF GENES INVOLVED IN THE LONG-CHAIN FATTY ACID TRANSPORT IN PANCREATIC DUCTAL ADENOCARCINOMA**

Anastasia-Maria Dobre¹, Radu-Cristian Poenaru^{1,2}, Maria Dobre^{1,2}

Elena Milanesi, Assistant Lecturer^{1,2}

¹Carol Davila University of Medicine and Pharmacy,

²Victor Babes National Institute of Pathology

INTRODUCTION: Pancreatic Ductal Adenocarcinoma (PDAC) is a type of cancer characterized by great severity, low survival rate and limited range of treatments. Modifications in lipid metabolism such as aberrant de novo lipid synthesis and reprogrammed lipid metabolism have been theorized to be linked with the evolution of this malignancy. The aim of this study is the identification of the possible involvement of lipid metabolism in PDAC by analyzing the expression level of the most relevant genes implicated in the long-chain fatty acid import into cell, in both tumoral and non-tumoral tissues. **MATERIALS AND METHODS:** The gene expression analysis of FASN, CD36, SLC27A1, SLC27A2, SLC27A3, SLC27A4, SLC27A5, ACSL1, and ACSL3 was conducted by qRT-PCR in 24 PDAC tissues and 11 samples from non-tumoral pancreatic tissues. The nonparametric Mann-Whitney test was used to assess the statistical differences between the two groups and a p-value of <0.05 and a fold change (FC) value of ≤ 0.5 and ≥ 2 were chosen to identify the significant dysregulation between the two groups. **RESULTS:** The investigation revealed significant upregulation of three fatty acid transporters: SLC27A2 (FC = 5.66; p = 0.033), SLC27A3 (FC = 2.68; p = 0.040), and SLC27A4 (FC = 3.13; p = 0.033) and two long chain acyl-CoA synthetases: ACSL1 (FC = 4.10; p < 0.001), and ACSL3 (FC = 2.67; p = 0.012) in the tumoral tissue compared to the non-tumoral tissue. We also found the over-expression of SLC27A3 (FC = 3.28; p = 0.040) comparing seventeen patients presenting lymph node invasion with seven patients without. **CONCLUSION:** Our findings highlight the dysregulation of genes involved in the long-chain fatty acid import into cell in PDAC tissue. The results may be useful for inspiring extensive studies in vitro and in vivo to better understand the molecular mechanism underpinning the relation between lipid metabolism and PDAC. This research was funded by the Romanian Ministry of Research, Innovation and Digitization under grant n. PN 23.16.02.04

01. A BETTER TOOL FOR A BETTER VIEW: SMILE VS FS-LASIK

Maria-Andrada Păun¹

¹Carol Davila University of Medicine and Pharmacy Bucharest

INTRODUCTION: The most common refractive ocular pathology is myopia and to treat it, science has developed two types of laser: Femtosecond Laser-Assisted in Situ Keratomileusis (FS-LASIK) and Small Incision Lenticule Extraction (SMILE). The aim of the study is to highlight which one has fewer side effects. **MATERIALS AND METHODS:** An extensive search of the Pubmed database was conducted using the following keywords: „FS-LASIK laser“, „SMILE laser“. Articles from the last 6 years were included and were composed of reviews and meta-analyses. Only articles addressing which laser had a better Tear Breakup Time (TBUT), had a smaller Maximum Posterior Elevation (MPE) and which show the difference between the effects of Corneal Hysteresis (CH) and Corneal Resistance Factor (CRF) were included. Studies that lacked inclusion criteria were excluded. Bias risk was not evaluated and PRISMA guidelines were used for data abstraction. **RESULTS:** Out of the total of 12 studies, only 6 were used, involving a total of 1172 human eyes. Aris Konstantopoulos et al demonstrated that ectasia developed in LASIK and SMILE cases; following LASIK, the Maximum Posterior Elevation (MPE) became significantly increased at week 2 compared to week 6 for SMILE cases. SMILE showed a smaller MPE than LASIK (17.73 vs. 22.75 μ m at week 2). According to Yu-Chi Liu, SMILE group has better results in TBUT and corneal staining. After 6 months, there was a significant difference in TBUT scores between SMILE (7.06 seconds) and FS-LASIK (4.97 seconds) groups ($P=0.030$). Finally, corneal hysteresis (CH) and corneal resistance factor (CRF) has the following results: SMILE versus LASIK was 1.31 (95% CI, 0.54 to 2.08; $p < 0.001$; $I^2 = 77\%$) **CONCLUSION:** These findings suggest that SMILE may have a smaller MPE than LASIK but also advantages in terms of preserving corneal biomechanical strength (CH/CRF) after surgeries and a better TBUT.

Poster Session

CASE REPORTS

01. AN UNUSUAL, RARE, SPECIFICALLY LOCATED SKIN CONDITION: BUSCHKE-FISCHER-BRAUER SYNDROME

Ruxandra Ioana Petreuş¹, Paul - Florian Radu¹, Andreea Cristiana Pavel¹

Mircea Milaciu, MD²

¹„Iuliu Hațieganu“ University of Medicine and Pharmacy, Cluj-Napoca,

²4th Department – Internal Medicine, „Iuliu Hațieganu“ University of Medicine and Pharmacy, Cluj-Napoca

BACKGROUND: Buschke-Fisher-Brauer syndrome is a rare hereditary autosomal dominant disease. This syndrome is part of the palmoplantar keratoderms (PPK) that are clinically characteristic by abnormal keratinisation that only affects hands and feet. Differential diagnosis is crucial to rule out the possibility of paraneoplastic syndromes which can be associated other hyperkeratoderms and can be concluded by a histopathological examination. **CASE PRESENTATION:** We report a case of a 84-year-old man with postprandial epigastralgia, nausea, asthenia, retrosternal pain at efforts of moderate intensity, loss of appetite associated with slight weight loss and type II arterial hypertension. During the clinical examination, multiple yellow and brown hyperkeratotic papules were detected on the palmar and plantar surfaces of the hands and feet, without being localised on other areas of the body. The skin pathology developed insidiously, having its onset about 41 years before, with small hyperkeratotic papules, which increased in size over the years. Patient mentioned that his two sons share the same skin condition. The patient refused to perform a biopsy from the level of hyperkeratotic macules; the diagnosis of BFB syndrome could however be established due to the typical appearance of the hyperkeratoses, the classic palmo-plantar disposition, and due to the apparent autosomal dominant transmission with onset at adulthood. Normal PSA (Prostatic Specific Antigen) level along with the presence of a sigmoid diverticulitis without obvious inflammatory or tumoral lesions had helped in making the differential diagnosis of other hyperkeratoderms associated with neoplasms. **CONCLUSION:** Buschke-Fisher-Brauer syndrome is a rare hereditary dermatological condition that is part of the punctate palmoplantar keratoderma group. We presented the case of an elderly patient with a long evolution of palmoplantar keratoderma, confirmed as Buschke-Fisher-Brauer syndrome by the typical clinical appearance, the onset in adulthood and the positive family history for this pathology. The particularities of the case are represented by the rarity of this syndrome and the long asymptomatic evolution of hyperkeratosis in the patient.

02. BEYOND STONES: TREATMENT CHALLENGES OF A LIFELONG CONDITION, AND EXPLORING NOVEL APPROACHESBogdan Borzei¹, Laura Damian³, Adina Chiş²Prof. Romana Vulturar, MD, PhD²¹University of Medicine and Pharmacy "Iuliu Hațieganu", Cluj-Napoca, Romania²Discipline of Cell and Molecular Biology, Department of Molecular Sciences, University of Medicine and Pharmacy "Iuliu Hațieganu", Cluj-Napoca, Romania³Department of Rheumatology, Center for Rare Musculoskeletal Autoimmune and Autoinflammatory Diseases, Emergency Clinical County Hospital Cluj, Cluj-Napoca, Romania

BACKGROUND: Cystinuria is a genetic disorder characterized by high renal excretion of cystine and dibasic amino acids, leading to kidney stone formation. It is primarily inherited in an autosomal recessive manner, although some mutations in the SLC3A1 or SLC7A9 genes may exhibit semi-dominant traits. These genes encode the rBAT heavy subunit and the cystine-dibasic amino acids transporter, essential for its reabsorption in the proximal tubules. Impaired transport and increased cystine excretion cause supersaturation and stone formation, especially at acidic urine pH. **CASE PRESENTATION:** We present the case of a 54-year-old male who was diagnosed with severe acute flank pains since his adolescence. Ultrasonography confirmed the presence of stones in the kidneys, and urine sediment contained hexagonal crystals. The amino acids chromatography indicated high levels of cystine, lysine, ornithine, and arginine, confirming the origin of the stones. Throughout his life, he has undergone more than 20 surgical interventions, as preventing stone formation has proven challenging. Despite the efforts to manage the condition with restrictive diet, urinary alkalinizers, and thiol drugs, he continued to exhibit the formation of cystine stones, as well as mixed stones, with salts formed as a result of urine alkalinization. Besides, he experienced side effects from tiopronin, a thiol drug used to reduce cystine levels. Management of cystinuria focuses on dietary modifications, increased hydration, and pharmacological interventions. Lipoic acid, used as an antioxidant, has emerged as a promising therapeutic agent, as it may enhance cystine solubility and decrease urinary cystine levels. Furthermore, as a chronic disease, a potential link between telomere length and renal health could indicate that shorter telomeres may be associated with increased oxidative stress and renal dysfunction. Exploring this relationship could provide new insights into the pathophysiology of cystinuria and guide future therapeutic strategies. **CONCLUSION:** This case highlights the importance of clinical, imaging, and biochemical analyses in diagnosing cystinuria. Early recognition and management are vital for preventing recurrent stone formation and associated complications. Understanding a chronic disease should also consider the implications of telomere biology, as telomere dynamics may play a role in renal health and the pathophysiology of this disorder.

03. A RARE CAUSE OF UPPER LID SWELLING: CASE REPORTStefan Galbău¹Coordinator: Khadija Saleemi²¹"Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca,²Faculté de Médecine de Sfax

BACKGROUND: Cutaneous leishmaniasis (CL) is an infection caused by protozoa belonging to the genus *Leishmania*. The disease is transmitted by the bite of sandfly (*Phlebotomus*). Reservoirs are represented by dogs, mice, rats, wild rodents and, more rarely, humans. In Tunisia, CL is endemic. *Leishmania infantum*, transmitted by *Phlebotomus papatasi* and *Phlebotomus perfiliewi*, is responsible for the majority of cases. Clinically, CL is usually characterized by polymorphous lesions located in an uncovered area. The eyelid is rarely involved. It represents 2.5% of CL cases. The most common aspect of lid leishmaniasis is chalazion-like. However, it can rarely mimic other dermatoses such as tuberculosis and palpebral tumours. We present an atypical case of CL characterized by uncommon localization (the hole upper lid) and form (pseudo-tumoral). **CASE PRESENTATION:** A 64-year-old patient was referred to our department for suspicion of a palpebral tumor. The lesion appeared 1 month before as a 1cm-painless papule of the right upper lid. The lesion involved all the eyelid which became inflamed with an oozing crusted ulceration and budding edges, responsible for a total palpebral occlusion. The lower eyelid was the site of sporotrichoid nodules in a linear distribution. Ocular examination showed conjunctival hyperaemia with yellowish secretions. The presence of typical papulonodular lesions on the forearm and ear lobule led us to perform a skin smear confirming the diagnosis of CL. The treatment consisted of intramuscular injections of meglumine antimoniate (glucantime®) at a dose of 60 mg/Kg/day for 21 days. The outcome was good with partial opening of the eye and healing of the conjunctivitis after 7 days of treatment. After 1 month, the patient was able to completely open his eye and the lesion had totally desinfiltrated. **CONCLUSION:** Clinical diagnosis of ocular CL can be challenging, especially when occurring in non-endemic areas. It can simulate other lesions such as tumors, including basal cell carcinoma, especially in its ulcerative form in elderly patients. CL rarely involve the eyelids, probably because the movements of the lids prevent the *Phlebotomus* from biting the skin in this region. However, the peak of crepuscular activity of *Phlebotomus* may explain the emergence of cases of palpebral CL. Lid lesions may be caused by the bite, inoculation of the lid by the patient's fingers, lymphatic dissemination, Koebner phenomenon or contiguous spread from a neighbouring site. The most common aspect of lid leishmaniasis is a chalazion-like lump but the tumor-like form was reported in rare cases. Contiguous spread from the skin of the lid can extend to involve the conjunctiva, sclera, and even cornea, with development of interstitial keratitis. Secondary bacterial infection with destruction of underlying soft and bony tissue is common. Ocular leishmaniasis is considered as a potentially blinding disorder; early diagnosis and rigorous treatment may prevent blinding complications.

04. BEYOND THE BASICS: MANAGING BULBAR ISCHEMIC STROKE AND MYASTHENIA GRAVIS IN ELDERLY PATIENT

Raul-Ioan Gârbacea¹

Carmen Corina Roman-Filip²

¹"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca,

²Lucian Blaga" University of Sibiu, Faculty of Medicine, Emergency County Hospital Sibiu, Neurology Department

BACKGROUND: Myasthenia gravis (MG) is an autoimmune neuromuscular disorder marked by fluctuating muscle weakness that can affect the ocular, bulbar, limb, and/or respiratory muscles. This weakness results from antibodies targeting the acetylcholine receptor (AChR), muscle-specific kinase (MUSK), or lipoprotein-related protein 4 (LRP4) in the postsynaptic membrane at the neuromuscular junction. MG can develop at any age, but it typically shows a bimodal distribution in onset age and sex. There is an early peak in the second and third decades, predominant in females, and a later peak in the sixth to eighth decades, predominant in males. **CASE PRESENTATION:** We report the case of a 77 year-old female with no significant history. The patient presented to the neurology department with symptoms suggestive of a bulbar ischemic stroke, including dysarthria and dysphagia, which began two days prior. Neurological examination showed she was conscious with a Glasgow Coma Scale score of 15, slightly reduced reflexes in the left limbs, right plantar flexion, and left plantar indifference. A cranial CT revealed no abnormalities, but MRI identified a small bulbar ischemic stroke. MDCT of the thorax showed a moderately iodophilic mass in the left paramediastinal area, close to the left superior pulmonary vein but not invasive. Her anti-AChR antibodies were elevated (10.14 nmol/L; normal <0.25 nmol/L), and neurophysiological testing of the right facial nerve showed decreased action potential in the orbicularis oculi muscle. Shortly after admission, she experienced her first myasthenic crisis with severe respiratory failure. Due to the location of the thymic mass, surgery was not feasible. Three sessions of plasmapheresis improved her symptoms, and she gradually responded to cholinesterase inhibitors and immunosuppressive therapy. Approximately two months post-discharge, she was relatively independent, mobilizing with unilateral support. **CONCLUSION:** The presented case highlights the importance of early diagnosis and treatment of myasthenia gravis for a better outcome. Challenges arise when two acute neurological conditions with similar clinical symptoms are present in an elderly patient. However, regardless of the severity of these conditions, we must take rapid action to improve the patient's quality of life.

05. TRIALS AND TRIUMPHS IN MANAGING ACUTE NECROTIZING PANCREATITIS – A CASE REPORT

Ioana-Alexandra Burghilea¹, Bianca-Alexandra Savin¹, Raul-Ioan Gârbacea¹

Lect. Liliana Dina, MD, PhD¹

¹"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca

BACKGROUND: Acute pancreatitis is an inflammatory process of the pancreatic parenchyma and surrounding tissues, with 5-10% of cases progressing to necrotising pancreatitis. Risk factors include metabolic disorders and cholelithiasis. This case report emphasizes the importance of compliance to updated therapeutic guidelines and conducting regular follow-ups. **CASE PRESENTATION:** In October 2023, a 70-year-old woman, T.Z., presented with severe epigastric pain radiating in a band-like pattern to the left upper quadrant and back, associated with nausea and emesis. Her medical history featured obesity, stage 2 arterial hypertension, and type 2 diabetes, but no significant intervention. Physical examination revealed altered mental status, anxiety, abdominal distension, and epigastric tenderness. Laboratory tests showed elevated serum amylase (783U/L) and lipase (2560U/L), increased liver enzymes (ALT=397U/L, AST=787U/L), elevated LDH (906U/L) and CRP (24.6 U/L). An abdominal ultrasound depicted a well-defined fluid collection in the omental bursa (80x39mm), with inner echogenic elements, an enlarged hypoechoic pancreas and decreased peristalsis. Differential diagnosis included acute mesenteric ischemia. An abdominal contrast CT scan confirmed an enlarged pancreas with lipomatosis, omental bursa fluid collection and patent atheromatous plaques in the abdominal aorta. The final diagnosis was acute necrotizing pancreatitis, complicated by acute liquid collection and a pancreatic pseudocyst. Treatment included fluid therapy (saline solution), analgesics, antiemetics (Metoclopramide), and antibiotics (Meropenem). The patient was closely monitored through monthly follow-ups, which she diligently adhered to. Conservative therapy yielded significant improvement, and further ultrasounds confirmed the complete resolution of the fluid collection (December 2023) and the pseudocyst (April 2024). In May 2024, a follow-up ultrasound revealed cholelithiasis with choledocholithiasis, showing echogenic intraluminal foci and posterior acoustic shadowing. This triggered another episode of acute pancreatitis. A successful laparoscopic cholecystectomy was performed, resulting in no adverse effects, and an uneventful postoperative course with regular follow-ups. **CONCLUSION:** This case aligns with the 2018 ESGE and AGA guidelines for managing acute pancreatitis, highlighting key strategies, such as the diagnostic importance of ultrasound and contrast CT, fluid resuscitation with saline solution, antibiotic prophylaxis with carbapenems in acute necrotizing pancreatitis and cholecystectomy for acute biliary pancreatitis. The prompt recognition and treatment of cholelithiasis, which caused acute pancreatitis, underscores the critical need for regular follow-ups.

06. A HIDDEN THREAT: LATE-ONSET OBSTRUCTIVE JAUNDICE AFTER DIAGNOSIS OF DUODENAL ADENOCARCINOMARadu Sabău¹, Bianca-Alexandra Savin¹, Maria Militaru¹Lect. Teodora Atena Pop MD, PhD¹¹"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

BACKGROUND: Duodenal adenocarcinoma is a rare but aggressive malignancy, accounting for less than 1% of all gastrointestinal cancers. Despite the unfavorable prognosis and the non-resectability in 25% of the cases, surgical treatment is curative. This patient's case of obstructive jaundice three years following surgery for duodenal adenocarcinoma focuses on the late complications that can occur in the context of this rare malignant entity. **CASE PRESENTATION:** A 73-year-old man was admitted to the gastroenterology department in May 2021 with epigastric pain that persisted for a month, being associated with nausea, vomiting and fatigue. Medical history included stage 2 hypertension, atrial fibrillation, chronic coronary syndrome and deep vein thrombosis. Upper GI endoscopy revealed edematous and infiltrated mucosa between D2 and D3 segments, while the histopathological examination confirmed the diagnosis of duodenal adenocarcinoma. CT scan showed tumoral invasion at the level of the upper mesenteric pedicle, the mesocolon and the mesentery, thus the diagnosis of stage IIb (T4N0M0) duodenal adenocarcinoma was established. The therapeutic management consisted of gastroenteroanastomosis, along with adjuvant chemotherapy. Three years following the procedure, the patient returns, complaining of lower abdominal pain. Bloodwork showed moderate normochromic normocytic anemia, leukocytosis with neutrophilia, inflammatory syndrome, hyperglycemia, hepatocytolysis syndrome, hyperbilirubinemia due to direct bilirubin and cholestasis syndrome. Abdominal ultrasound revealed mild bilateral dilatations of the intrahepatic bile ducts, the common bile duct of 25 mm, the Wirsung duct of 4.5 mm, and a 50/45 mm liver tumor formation in the VII lobe, along with a small amount of ascites at the pelvic level. In this regard, a diagnosis of obstructive jaundice complicated with Tokyo class II acute cholangitis is made, with suspicion of tumoral invasion at the choledochal level. **CONCLUSION:** This case of duodenal adenocarcinoma draws attention to the manifold risks and unforeseen challenges that may arise when establishing the therapeutic approach. Neoplastic spread typically occurs through the lymphatic system, regional lymph nodes, liver, peritoneum, and nearby organs, particularly the pancreas, via metastases. Obstructive jaundice in adults should be evaluated to rule out malignant biliary obstruction, including duodenal adenocarcinoma, and should warrant a search for hepatoduodenal ligament lymphadenopathy, bile duct wall thickening, and liver metastasis.

07. MASSIVE HEMORRHAGE: WHEN TUMORS AND VASCULAR MALFORMATIONS MEET - A CASE REPORTDragoș Alexandru Gălățanu¹, Mihai Alexandru Florescu¹, Alexia Maria Fodor¹Lect. Ofelia Moșteanu¹, Lect. Teodora Atena Pop¹¹"Iuliu Hațieganu" University of Medicine and Pharmacy

BACKGROUND: Dieulafoy's lesion (DL) is a malformation of the submucosal artery, which occurs due to a failed attempt to constrict and match the vasculature of the mucosa. Rather than tapering, it remains ten times larger than normal mucosal arteries, making it prone to excessive bleeding. Colonic DLs were found in only 0.09% of all colonoscopies performed for lower gastrointestinal bleeding, although the actual incidence is likely higher because the diagnosis remains difficult.

CASE PRESENTATION: An 83-year-old male patient complained of rectal bleeding with a sudden onset and epigastric pain that began two days prior. His medical history includes hypertension, erythematous gastritis, hemorrhoidal disease, and a cholecystectomy. Initially, laboratory findings showed anemia, with a decreasing hemoglobin (Hb) level of 11.2 g/dL. The patient underwent a colonoscopy, which revealed a lateral spreading tumor (LST) Paris type IIA in the caecum, assessed with great difficulty due to the massive amount of fresh blood and multiple blood clots. In proximity to the LST and the ileocecal valve, a bleeding DL was also found, and mechanical hemostasis was achieved using five endoclips. Another episode of rectal bleeding following an enema led to a continuous decline in Hb levels (7.4 g/dL). For further assessment, a CT angiography was performed, but no signs of active bleeding were identified. Additionally, the patient received four red blood cell transfusion units, and another endoscopic hemostasis was performed due to rebleeding. Postprocedural evolution was favorable, and the patient was discharged. A follow-up will assess the feasibility of endoscopic resection of the cecal lesion. **CONCLUSION:** Given their various manifestations and potential life-threatening risks, it is crucial not to disregard DLs in the differential diagnosis of lower gastrointestinal bleeding. The particularity of this case resides in the presence of an LST in the same anatomical area as the DL, raising several questions regarding the optimal treatment approach. Endoscopic clipping is reported to attain adequate hemostasis with minimal risks, while the newly identified tumor suggests that a right hemicolectomy may eventually be needed. Will awareness, improved recognition, and endoscopic therapy result in complete resolution, or will the LST play a factor in ultimately opting for a surgical approach?

08. AN ULTRASOUND-BASED DIAGNOSIS OF AORTO-MESENTERIC CLAMP SYNDROME

Marta Ecaterina Beșleagă¹, Nicoleta Paraschiva Barb¹, Mădălina Bardan¹

Asst. Lect. Rareș Crăciun, MD, PhD²

¹"Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania,

²Gastroenterology Department, "Prof. Dr. O. Fodor" Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Romania

BACKGROUND: Aorto-mesenteric clamp syndrome, also known as superior mesenteric artery (SMA) syndrome, results from the compression of the third portion of the duodenum and the left renal vein by a vascular clamp formed by the SMA and the aorta. The narrowing of the aorto-mesenteric angle is due to the loss of perivascular fatty tissue. The incidence of SMA syndrome has been estimated at 0.1% to 0.3%, with a higher prevalence in young adult females. It is often misdiagnosed due to vague upper gastrointestinal symptoms; however, a rigorous ultrasound examination is a valuable tool for early detection. **CASE PRESENTATION:** A 42-year-old female patient was referred due to intense postprandial abdominal pain, accompanied by bloating, vomiting, and significant weight loss (15 kg in one year). She had previously been diagnosed with postprandial distress syndrome. An ultrasound (US) exam was performed in the emergency room, revealing narrowing of the space between the aorta and SMA, with no other significant abnormalities, which raised suspicion of aorto-mesenteric clamp syndrome. A contrast-enhanced computed tomography (CE-CT) scan was performed to confirm the diagnosis. US findings: Aorto-mesenteric angle below 30° (reference range: 38-56°), compression of the duodenum and the left renal vein. CE-CT findings: Aorto-mesenteric angle of 23° at the point of SMA emergence, compression of the third portion of the duodenum, and mild gastric outlet obstruction. Due to the patient's symptoms and significant weight loss, aggressive nutritional therapy was initiated as the initial treatment, consisting of a high-calorie diet (>45 kcal/kg of ideal body weight/day) and a high-protein diet (>1.5 g of protein/kg of ideal body weight/day). After three months of conservative treatment, the patient gained approximately 5 kg, with a good long-term prognosis. In case of persistent symptoms, surgery is indicated, with the most common procedure being duodenojejunostomy. **CONCLUSION:** Aorto-mesenteric clamp syndrome is a critical condition characterized by long-term weight loss and vague gastrointestinal symptoms that can mimic other disorders. A careful examination of the patient, along with clinical suspicion and a thorough ultrasound scan, are key components in establishing the diagnosis.

09. OBSTACLES KEEP COMING: MANAGING LIVER CIRRHOSIS WITH REFRACTORY ASCITES AND FLOOD SYNDROME

Bianca Andreea Radu¹, Elena-Emilia Puțanu¹, Maria-Alexandra Niculae¹

Assoc. Prof. Dana Crișan, MD, PhD^{1,2}

¹"Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca,

²Clinical Municipal Hospital Cluj-Napoca

BACKGROUND: Liver cirrhosis is an advanced stage of progressive hepatic fibrosis characterized by diffuse nodular regeneration and distortion of hepatic vascular architecture. The major consequence is portal hypertension which manifests clinically as ascites, esophageal varices, hepatic encephalopathy, and hepatorenal syndrome (HRS). Despite maximal medical therapy, refractory ascites is defined as early fluid recurrence after drainage. Approximately 20% of patients eventually develop an umbilical hernia, which has a 30% mortality rate in complicated cases. A rare life-threatening complication is Flood syndrome characterized by the rupture of an umbilical hernia with spontaneous drainage of the ascites fluid. **CASE PRESENTATION:** A 62-year-old woman with liver cirrhosis of mixed etiology (ethanolic and viral hepatitis C, classified as Child-Pugh B and with a MELD-Na score of 12, grade 3 refractory ascites, and multiple comorbidities, presented with spontaneous drainage of ascitic fluid from umbilical hernia. This led to post-paracentesis circulatory dysfunction (PPCD) requiring electrolyte replacement solutions, albumin, and interruption of diuretic treatment. The hernia was manually reduced and treated locally until reevaluation after correction of the renal dysfunction. Despite treatment, the patient developed type one hepatorenal syndrome and was started on terlipressin. Although renal function initially improved, the treatment had to be stopped due to acute diarrhea as an adverse effect. Subsequently, the case became more complicated with the development of a distended abdomen and absence of intestinal transit, revealing an incarcerated umbilical hernia, which was treated surgically. While the patient initially showed a favorable evolution, her condition rapidly deteriorated. She developed grade 3 hepatic encephalopathy, with worsening scores on liver disease assessments, Child-Pugh C11 and MELD-Na 30, became hemodynamically unstable with multi-organ failure, and eventually experienced cardiopulmonary arrest with no response to resuscitation. **CONCLUSION:** This case illustrates the management of various complications of decompensated liver cirrhosis with ascites, including the particularity of Flood syndrome, complicated with PPCD after spontaneous drainage of the ascitic fluid. The complexity of the case was compounded by further complications, such as HRS, interruption of effective treatment due to adverse effects, incarcerated hernia, and acute hepatic insufficiency superimposed on chronic liver disease.

10. WHEN THE KIDNEYS FAIL SO DOES THE HEARTVlad Pastor¹, Dr. Konstinos Vakalidis³Oana Antal, MD, PhD²¹University of Medicine and Pharmacy Cluj-Napoca, ²Clinical Institute of Urology and Renal transplantation Cluj-Napoca, ³St.Luke's Hospital Thessaloniki

BACKGROUND: Cardiovascular disease in end-stage kidney disease (ESKD) remains the leading cause of morbidity and mortality following kidney transplantation (KTx). Preoperative cardiac assessment is still a topic of debate, lacking high-quality evidence guidelines. **CASE PRESENTATION:** We present the case of a 51-year-old patient who underwent a second live-donor KTx, after a first failing graft transplanted in 2002. The medical history mentioned stage II arterial hypertension, non-insulin dependent type II diabetes, B and C hepatitis co-infection, stage 2 obesity, and two urethral strictures surgically corrected. The preoperative cardiac assessment showed no conditions that would contraindicate transplantation: ECG, transthoracic echography (TTE) and functional cardiac assessment through Dobutamine stress echocardiography showed normal results, except o mild left ventricular hypertrophy. Kidney transplantation surgery proceeded without any significant complications. The immediate postoperative period was uneventful, with immediate graft urinary output, with no hemodynamic or respiratory complications. Fourteen hours after KTx, the patient developed a sudden cardiac tachyarrhythmia, accompanied by abdominal pain and agitation. A 12 lead ECG has shown a large complexes tachyarrhythmia. Arterial blood gasses reveled gradually increasing lactate levels, interpreted as signs of poor tissue perfusion. Emergency TTE showed a mildly decreased ejection fraction of the left ventricle (40%), an apex akinesis, globally reduced contractility and a dilatation of the inferior vena cava without inspiratory collapse. Due to the clinical rapid deterioration, and failed treatment course with antiarrhythmics, an electric cardioversion was performed, to potentially improve the cardiac output. The results of the electric cardioversion were limited, with the tachyarrhythmia reoccurrence after a few hours. Highly sensitive troponin levels were slightly elevated in the beginning, with rapid increase at 3 and 6 hours, up to a value of 25000 ng/ml. The patient underwent a emergency coronarography, which revealed a chronic occlusion of both the left main and circumflex arteries, with an acute right coronary occlusion. The cardiogenic shock was unresponsive to the therapeutic measures and led to multiple organ disfunction, and eventually to death. **CONCLUSION:** In high-risk patients, such as those with ESKD, prediction of major cardiovascular events is difficult. Normal preoperative cardiac assessment, including stress tests, can often, miss patients with coronary artery disease.

11. CHALLENGES OF PROLONGED ECULIZUMAB THERAPY IN ATYPICAL HEMOLYTIC UREMIC SYNDROMEElisabeta Sasu¹, Alexia Urtoi¹Assoc. Prof. Iuliana-Magdalena Stârcea, MD, PhD^{1,2}, Snr. Lect. Maria-Adriana Mocanu^{1,2}, Asist. Lect. Bogos Roxana Alexandra, MD, PhD^{1,2}¹Universitatea De Medicină și Farmacie „Grigore T. Popa” Iași,²Spitalului Clinic de Urgență pentru Copii „Sfântă Maria” Iași

BACKGROUND: Atypical hemolytic uremic syndrome (aHUS) is a rare triad of microangiopathic hemolytic anemia, thrombocytopenia, and acute renal failure which is potentially life-threatening. It stems from an uncontrolled activation of the complement system triggered by genetic mutations or autoimmune conditions. Eculizumab is a terminal complement inhibitor effective in managing aHUS. **CASE PRESENTATION:** An 8-year-old with no significant medical history was admitted to St. Mary's Hospital, Iasi, in November 2023, presenting with multiple soft stools, hematochezia, lower limb edema, jaundice, and oliguria. Urinalysis showed microscopic hematuria and proteinuria. Tests revealed microangiopathic hemolytic anemia (7-8% schistocytes), falling hemoglobin (9.9g/dL to 5.6g/dL), thrombocytopenia (46 000/mm³), and impaired renal function (creatinine clearance 15.5 ml/min/m², creatinine 3.55 mg/dL, urea 132 mg/dL). The presentation suggested atypical hemolytic uremic syndrome (aHUS), confirmed by a negative Shiga toxin assay. He began hemodialysis and plasmapheresis, followed by Eculizumab (Soliris). Timely anti-meningococcal and anti-pneumococcal vaccines were administered, considering the risk for severe infections associated with complement inhibiting therapy. His condition improved significantly following several doses of Eculizumab (hemoglobin: 10.4g/dL, thrombocytes: 375 000/mm³, serum creatinine 0.71 mg/dL). Genetic testing identified a mutation in the p.Gly292Val gene, associated with reduced levels of factor I, which is implicated as the causative factor in the development of aHUS. During a reevaluation in April 2024, while receiving the 13th dose of Eculizumab, hepatocellular injury syndrome was identified. Given the absence of other clinical signs or symptoms of liver dysfunction, treatment was maintained, with close monitoring and regular follow-up testing. **CONCLUSION:** This case highlights the therapeutic benefits of long-term Eculizumab treatment in managing aHUS associated with Factor I deficiency, while raising awareness of potential hepatic side effects. Continuous monitoring is crucial in pediatric patients with chronic aHUS treatment to detect changes in condition, manage complications, and ensure optimal outcomes.

12. IDIOPATHIC RETROPERITONEAL FIBROSIS: A CASE REPORTAndrei-Daniel Dragne¹, Mădălina Ștefania Vulcan²Assoc. Prof. Camelia Georgeta Badea, MD, PhD^{1,2}¹Carol Davila University of Medicine and Pharmacy,²Colentina Clinical Hospital

BACKGROUND: Chronic periaortitis (CP) is a rare disease characterized by development of retroperitoneal fibro-inflammatory tissue which usually surrounds the infrarenal part of the abdominal aorta and the common iliac arteries. It can extend to neighboring retroperitoneal structures causing severe complications, most commonly affecting the ureter which determines obstructive uropathy and secondary kidney disease. CP has two subtypes, the non-aneurysmal form, known as idiopathic retroperitoneal fibrosis (IRF), and aneurysmal forms. It can be idiopathic or secondary to pathological processes, such as malignancy, infection, radiotherapy, drugs, major abdominal surgery and it can develop isolated or associated to systemic or organ-specific autoimmune diseases. **CASE PRESENTATION:** A 54 years-old, diabetic, hypertensive man presents for bilateral lower extremity edema. He has a history of sharp, intense, nocturnal, right flank abdominal pain with referred back pain, for which multiple imagistic studies (ultrasonography, CTs, MRIs) were done in previous admissions. These showed an inferior retroperitoneal mass which surrounded the infrarenal region of the abdominal aorta, the iliac arteries and the inferior vena cava, associating lumbo-aortic polyadenopathies, periaortic tissue densification, right ureter entrapment, reduced dimensions of the right kidney and right uretero-hydronephrosis (UHN). All the findings were suggestive of retroperitoneal fibrosis. For the management of UHN a ureteral JJ stent was placed. In the current admission, an extensive diagnostic work-up was done for etiological assessment of the disease. Blood tests showed impaired renal function (elevated blood urea nitrogen and creatinine), elevated inflammation markers (erythrocyte sedimentation rate, C-reactive protein) and slightly positive anti-nuclear antibodies (ANAs). Imagistic studies showed a slight reduction in dimensions of the mass and the presence of grade II-III UHN. There were no arguments for the presence of infection (*Treponema pallidum*), malignancy or associated systemic autoimmune disease (systemic lupus erythematosus, rheumatoid arthritis, giant cell arteritis, IgG4-related disease) or organ specific autoimmune disease (autoimmune thyroiditis). The diagnosis of idiopathic retroperitoneal fibrosis was proposed taking into consideration the history, clinical presentation and paraclinical findings. As a result, the patient started treatment with methylprednisolone and clinical and imagistic improvement were seen. **CONCLUSION:** This case presents the diagnostic work-up, differential diagnosis, management and some possible complications of IRF, a rare fibro-inflammatory disease.

13. PLANNED SURGERY FOR PHEOCHROMOCYTOMA UNVEILS CANCER: A LAPAROSCOPIC REVELATIONElena-Emilia Puțanu¹, Bianca Andreea Radu¹, Alexandra Elena Oros¹Dana Crișan MD, PhD²¹"Iuliu Hațieganu" University of Medicine and Pharmacy,²Clinical Municipal Hospital, Cluj-Napoca

BACKGROUND: Pheochromocytoma is a rare, usually benign tumor that develops in the chromaffin cells of the adrenal glands, which are responsible for both the synthesis and release of catecholamine hormones. This type of tumor may therefore lead to episodes of severe and fluctuating hypertension, most commonly associated with symptoms such as palpitations, excessive sweating, headaches, anxiety and tremor. In spite of these arguments, the further existence of other tumor masses in the adrenal gland is also asserted, which may pose the problem of a differential diagnosis with the previously referenced one. Within this framework, we refer both to those derived from adrenal cells, but also to other carcinomas that can metastasize to this region. **CASE PRESENTATION:** A 63-year-old male patient, known with a recently diagnosed right adrenal tumor mass, a potential pheochromocytoma, is admitted to the cardiology department for preinterventional medical treatment. Concerning the general physical examination, the patient exhibits generalized pallor, generalized tremor and a decreasing weight curve. Following additional imaging investigations, it was detected an inhomogeneous tumor mass with no demarcation from the right kidney and liver, compressing the inferior vena cava and the right renal vein. Subsequent to the treatment, the patient underwent surgery which became a diagnostic laparoscopy, thereby establishing a tumor invasion of the inferior vena cava and the right hepatic lobe, so a biopsy collection was performed. In the light of the histopathological results, it was determined a poorly differentiated CK7-positive carcinoma, which does not fit into the primitive adrenal tumors, and the starting point was to be sought. The patient was subsequently admitted to the internal medicine department and underwent a thoracic AngioCT, which revealed a voluminous tumoral mass located within the area of the right adrenal gland, with the invasion of the adjacent kidney. Moreover, a right paratracheal mediastinal lymphadenopathy was detected, leading to a superior vena cava syndrome. Finally, a palliative chemotherapy with carboplatin and symptomatic medication were followed. **CONCLUSION:** To conclude, the particularity of this case resides in the unexpected turn of the initial pheochromocytoma, to a primary pulmonary tumor, therefore illustrating the importance of thorough diagnostic evaluation.

14. FINDING THE BALANCE IN ONCOLOGY WHEN THROMBOEMBOLISM OCCURS - A CASE REPORTBianca-Alexandra Savin¹, Ioana-Alexandra Burghilea¹, Radu Sabău¹Alin Ionuț Grosu MD¹,¹"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca

BACKGROUND: Thromboembolic events, particularly in cancer patients, are a significant concern due to their 30% mortality rate. The case of a patient with clear cell renal carcinoma who developed thromboembolic complications post-surgery underscores the critical need for adherence to contemporary guidelines and a tailored therapy. **CASE PRESENTATION:** In June 2023, a 52-year-old male, C.G., was admitted for intermittent moderate lumbar pain. His medical history included bilateral renal lithiasis, but no relevant intervention. Following an abdominal ultrasound, suspicion arose regarding a right renal tumor. CT (computed tomography) confirmed in July 2023 a right renal mass causing obstruction of the renal pelvis and ureter, along with an osteolytic lesion at the L2 vertebra. A biopsy confirmed the diagnosis of clear cell renal carcinoma, distinguishing it from papillary or chromophobe renal cell carcinoma. In August 2023, the patient underwent stereotactic body radiotherapy to the L2 vertebra, followed by a radical right nephrectomy for cytoreductive purposes in September 2024. Dissection was complicated by fixed adenopathic masses enveloping the inferior vena cava and the psoas muscle, leading to the operation's halt. On the first postoperative day, the patient presented with acute chest pain and marked dyspnea, hemodynamic instability, including tachycardia and hypotension. CT angiography confirmed a massive pulmonary embolism. The patient received thrombolytic therapy with Alteplase. He was administered unfractionated heparin. On the seventh day, he developed soreness in the left leg and physical examination revealed edema. Angio-CT identified deep vein thrombosis in the popliteal and gastrocnemius veins. The patient was switched to oral anticoagulation with Rivaroxaban, and was prescribed compression therapy. His condition stabilized. He was transferred to the urology ward, but the cardiovascular monitoring continued uneventfully. **CONCLUSION:** The 2023 European Society of Cardiology and European Society for Medical Oncology guidelines highlight the risk of bleeding when proceeding with thrombolytic therapy in cancer patients, especially those who are unstable or have undergone recent surgeries. Direct oral anticoagulants like Rivaroxaban are recommended for the treatment and prophylaxis of venous thromboembolism in cancer patients, as a safety profile regarding bleeding is required. However, thrombolysis can be a lifesaving intervention in particular cases. Optimal outcomes imply a personalized risk-benefit analysis.

15. AGAINST ALL ODDS: BILIARY STENTING IN KLATSKIN TUMOR WITH ASTOUNDING SURVIVALMihai Alexandru Florescu¹, Alexia Maria Fodor¹, Dragoș Alexandru Gălățanu¹

Lect. Ofelia Moșteanu MD, PhD, Lect. Teodora Atena Pop, MD, PhD

¹"Iuliu Hațieganu" University Of Medicine And Pharmacy

BACKGROUND: First described in 1965, Klatskin tumor (KT) is a rare malignancy with an annual incidence of no more than 1:100,000, originating at the bifurcation of the common bile duct. These tumors emerge in a complex anatomical area, posing challenges for diagnosis and treatment. They are associated with a poor prognosis, with a median survival of 6 to 12 months in inoperable cases. **CASE PRESENTATION:** This case involves a 71-year-old male patient who first presented in 2017 with jaundice, dark urine, pale stools, and fever. His medical history includes atrial fibrillation, pulmonary hypertension, ischemic stroke, and right crural hemiparesis. A magnetic resonance cholangiopancreatography (MRCP) revealed a common bile duct stricture with tumoral extension to the left and right hepatic ducts, indicative of Bismuth IV hilar cholangiocarcinoma. Two plastic biliary stents were placed during an endoscopic retrograde cholangiopancreatography (ERCP) procedure. The patient's condition improved, and although an oncology consultation was strongly recommended, the patient did not attend and has not been followed up in an oncology center. To maintain normal bile flow, the plastic stents were periodically replaced in subsequent years during multiple ERCP procedures. Histopathological examination and brush cytology further supported the suspicion of hilar cholangiocarcinoma associated with the stricture initially detected on the first MRCP. His latest laboratory findings showed elevated C-reactive protein, along with indicators of cholestasis and hepatocytolysis. **CONCLUSION:** This case illustrates an extraordinary 7-year survival in a patient with KT, defying the typically poor prognosis associated with this malignancy. Despite sparse comprehensive studies analyzing factors influencing long-term survival, data has shown that advanced age, multiple comorbidities, hepatocytolysis and cholestasis, higher inflammatory markers, and Bismuth types III and IV are linked to a poorer prognosis. Moreover, ERCP with photodynamic therapy seems to enhance survival in patients with unresectable cholangiocarcinoma compared to ERCP alone. The median survival for patients treated by endoscopic stenting alone is as low as 8.5 months, with a 5-year survival rate of just 3%. Taking all of this into account, our case meets most of the negative prognostic factors yet greatly surpasses greatly the presumed life expectancy.

16. WHEN A HEALTHY BABY TURNS SEPTIC: A CASE OF NEONATAL ENDOCARDITISAndreea Braşoveanu¹, Anna Braşoveanu¹, Cristina-Maria Boznea¹Simona-Sorana Căinap MD, PhD^{1,2}¹Iuliu Haţieganu" University of Medicine and Pharmacy,²Pediatrics Hospital II, Cluj-Napoca

BACKGROUND: Infective endocarditis is a highly uncommon occurrence in neonates with structurally normal hearts, and, though rare, poses a significant risk of morbidity and mortality. While the tricuspid, pulmonary and mitral valve have been recorded as lesion sites, the aortic valve is, most probably, the rarest of them all. **CASE PRESENTATION:** Here we present a three-week-old female patient, with complaints of persistent fever, paleness, food refusal and apathy. She was born at term, from a healthy mother and had an APGAR score of 10. Respiratory, urinary and gastrointestinal infections have been ruled out and hemocultures were collected. The etiology of the infection was established to be *Streptococcus agalactiae*, a beta-hemolytic group B streptococcus. A transthoracic cardiac ultrasound was performed and aortic valve vegetations, severe aortic insufficiency and left ventricle dilation were evidenced. Antibiotic therapy and inotropic support were administered, with a significant improvement in symptoms. When the patient was stable and the acute episode had passed, she was treated surgically and had a good recovery. **CONCLUSION:** Although scarce, infective endocarditis is a life-threatening condition and demands immediate attention. Once diagnosed, promptitude is key when it comes to the treatment in order to provide optimal care for the patient. Alongside antibiotic therapy, providing supportive care and considering surgery as an option are essential.

17. CHALLENGING DIAGNOSIS OF PERSISTENT FEVER IN PEDIATRIC PATIENTS: A CASE OF TUBERCULOSISIarina-Liana Marian¹, Ştefan Manea¹, Iulia Iuonaş¹Ana Maria Pitea¹¹George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

BACKGROUND: The World Health Organization states that tuberculosis is one of the top three infectious diseases contributing to global mortality. Pediatric patients under the age of two are at greater risk for complications due to their immune immaturity. **CASE PRESENTATION:** We report the case of a 1-year-old girl who presented with persistent fever and nasal congestion, and was treated at home with Cefuroxime after receiving Azithromycin for three days. Due to the severity of her symptoms, which included a 39.5°C fever, otalgia and emesis, she presented to the emergency department, where she was put on Ampicillin, Gentamicin and Ceftriaxone, in addition to symptomatic and rehydration therapy. She arrived at our clinic with symptoms of agitation, hyperemic pharynx, tonsillar hypertrophy, bilateral microadenopathy, dysphonia, dry cough, serous rhinorrhea and abnormal lung auscultation. Vaccination history indicated previous immunization in Germany. She tested negative for SARS-CoV-2, Influenza A and B, RSV, Adenovirus and Rotavirus. The urine test and coproculture were normal. Leukopenia with lymphocytosis, thrombocytosis, ESR of 55 mm/g, CRP of 23 mg/L were all observed in the laboratory. The new treatment included antibiotherapy with Clindamycin, Ceftriaxone and Amikacin, with an additional antimycotic (Fluconazole). Rubella, EBV and Toxoplasma tests returned negative and abdominal ultrasonography showed increased peristalsis and meteorism. The ENT consultation established the following diagnosis: Acute herpangina, febrile syndrome, pneumonia under observation with no acute otic foci. A chest X-ray was recommended, which revealed bilateral peribronchovascular infiltration and right intercleidohilar pulmonary consolidations. A cardiology consultation confirmed normal cardiac function. Based on the chest X-ray results and the patient's medical history, a pulmonologist raised the suspicion of tuberculosis, suggesting treatment with Cefuroxime 2x500 mg IV. IDR and Xpert MTB/RIF assays were then performed, and the results were positive. After that, the patient was referred to a pulmonary clinic for additional care. The discovery of the patient's grandfather having tuberculosis, suggesting that he is most likely the source of her infection. She is currently treated with Isoniazid, Pyrazinamide, Ethambutol, and Vitamin B6. **CONCLUSION:** This case emphasizes the need for a comprehensive assessment when pediatric patients present with ongoing symptoms. Effective management and better patient outcomes depend on prompt diagnosis and interdisciplinary teamwork.

18. PUTTING LIFE ON HOLD: A CASE OF MIXED ANXIETY-DEPRESSIVE DISORDER DURING ADOLESCENCE

Vlad Răzniceanu¹, Eugen-Valentin Răducu¹, Ștefania-Maria Mocrei-Rebrean¹

Bogdana Miclea MD, PhD¹

¹University of Medicine and Pharmacy "Iuliu Hațieganu", Cluj-Napoca

BACKGROUND: Mixed anxiety-depressive disorder (MADD) is a frequent psychiatric diagnosis among adolescents, epidemiological studies reporting prevalences as high as 10%. The disease burden of suicidal ideation and self-harm is amplified by functional impairments that can persist into adult life. In the case in question, MADD is coupled with familial antecedents of psychiatric illness and borderline personality disorder (BPD) traits, thus underscoring the importance of swift integrative interventions in the management of this condition. **CASE PRESENTATION:** 15-year-old patient P.E. presented for a psychiatry consultation in the context of multiple adaptive limitations that led to the interruption of her studies. Psychiatric family history revealed her father's suicide attempt 10 months prior to the patient's presentation. Heteroanamnesis highlighted good academic performance up to middle school, while the patient reported feelings of inadequacy associated with the influence of her strict, demanding maternal grandmother. Adolescence registered a worsening of symptoms that culminated in a 1 year hiatus from school on medical grounds, followed by a failed attempt to resume school. The patient accuses anxiety across multiple domains: agoraphobia, acrophobia, entomophobia, as well as affective instability, sleep disturbances, and fluctuating sexual orientation. In stressful situations, the patient describes episodes of derealization, suicidal ideation, and self-harm. The Multidimensional Anxiety Scale for Children placed the patient in the 98th percentile for anxiety. The Child Depression Inventory indicated the presence of severe depression without immediate suicidal risk. The Child Behaviour Checklist questionnaire revealed somatic complaints, severe anxiety, depression and thought problems. The current treatment regimen includes Lamotrigine, low-dose Quetiapine, Clomipramine, and Bromazepam daily over the past month. Notwithstanding the treatment, the patient's symptoms persist. **CONCLUSION:** This case emphasizes how intricately teenage emotional development and mixed anxiety-depressive disorders interact. Given the patient's unresponsiveness to treatment, multidisciplinary interventions entailing parental involvement and psychotherapeutic assistance are warranted. Modifying the pharmacological scheme could be considered, such as removing benzodiazepines and adding a neuroleptic (e.g. aripiprazole) to combat the possibility of long-term psychosis given the patient's risk factors. Finding the proper management approach is paramount to ensure social readjustment and culling of suicidal tendencies in pediatric MDD patients.

19. RUNNING OUT OF OPTIONS: RECURRENT CLOSTRIDIODES DIFFICILE INFECTION IN PATIENT WITH ULCERATIVE COLITIS

Anna Brașoveanu¹, Andreea Brașoveanu¹, Cristina-Maria Bozne¹

Radu-Alexandru Fărcaș, MD²

¹"Iuliu Hațieganu" University of Medicine and Pharmacy,

²Department of Internal Medicine, Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

BACKGROUND: Ulcerative colitis (UC) is an idiopathic, chronic immune-mediated disorder of the colonic mucosa associated with various complications, including *Clostridioides difficile* infection (CDI). The recurrence of CDI, usually in patients with compromised immune function, has a higher risk of poor evolution, toxic megacolon and bowel perforation being the most dangerous ones. **CASE PRESENTATION:** A 37 year-old female, previously diagnosed with Hashimoto's thyroiditis, presented at the gastroenterology department with diarrhea with sanguinolent stools (2-5 stools/day), cramping, abdominal pain and weight loss (8 kg). The symptoms have begun in June 2023, with diffuse abdominal pain and rectorrhagia. On physical examination, she had periorbital oedema and pallor. The blood tests revealed mild hypokalemia, elevated levels of C-reactive protein, hypoproteinemia, hyperuricemia and negative ANA and pANCA. Fecal calprotectin was highly elevated. A stool test detected *Clostridioides difficile* and orally Vancomycin was initiated. Rectosigmoidoscopy and histological exam confirmed a diagnosis of Mayo grade 3 UC. The patient had a good evolution and was discharged 10 days after. In the following year, however, she had five more CDI episodes, four of which were treated with Vancomycin and Metronidazole and the last one with Fidaxomicin. One month after she ended the treatment with Fidaxomicin, she presented another episode of CDI. As she was unresponsive to the Azathioprine treatment, Infliximab was associated after the third episode. As the presentation was so severe, fecal microbiota transplantation is being considered. **CONCLUSION:** CDI in patients with UC is a complication that can significantly alter the quality of life and have serious implications on the patient's general health. A symptomatology as severe is less common in UC patients, thus having an important prognostic on treatment response and prognosis.

20. A NEED FOR SPEED SOLUTION FOR A BRAKE-FREE CHALLENGECarolina Nunu¹Asst. Lect. Alexandru Rusu, MD, PhD(s)¹¹"Grigore T. Popa" University Of Medicine And Pharmacy Of Iași

BACKGROUND: Melanomas are malignant, highly metastatic tumors, with an increasing incidence worldwide, affecting especially fair-skinned individuals. Immune checkpoint inhibitors, as part of immunotherapy, have been a key focus in the treatment of melanoma, due to their notable prolongation of overall survival, yet their administration can cause immune reactions against self-cells, leading to severe autoimmune diseases. **CASE PRESENTATION:** V. M. is a 67-year-old female patient with no history of cardiovascular diseases, presenting with a right scapular skin lesion, confirmed anatomopathologically as malignant melanoma. Imaging revealed multiple secondary pulmonary, hepatic, splenic and cutaneous lesions. Given the metastatic status and absence of BRAF mutation, the patient started combination anti-PD-1/anti-CTLA-4 therapy with Nivolumab and Ipilimumab as first line treatment. Owing to developing grade 2 liver and digestive toxicity after only 4 courses, the treatment was withheld until she had positively responded to steroids. 2 months later, the patient returns with compromised general condition, dyspnea, shivers, hypotension (65/30 mmHg), and increased heart rate (110 beats per minute). Normal levels of D-dimers excluded a likely immune-mediated pneumonia. CT-scan of thorax displayed pulmonary edema and cardiomegaly, leading to a cardiology exam from which relevant are the echocardiography results, revealing a LVEF of 15%, raising the suspicion of ICI-associated myocarditis. Because of the hemodynamic instability, heart biopsy to confirm could not be performed. The patient was transferred to an intensive care unit where despite high-doses of corticotherapy, and supportive treatment, she deceased. **CONCLUSION:** Cardiotoxicity in immunotherapy-treated patients, although it occurs infrequently, represents a significant global challenge for cancer control and public health as it shortens life drastically, therefore early multidisciplinary detection, management, and alternatives for possible adverse effects should be assessed promptly.

21. PSEUDOMYXOMA PERITONEI: A 'JELLY BELLY' WITH LETHAL CONSEQUENCES - A CASE REPORTOana-Maria Popescu¹, Florin-Alexandru Popa¹, Cristiana Guzu¹Ioana Rusu^{1,2}¹Universitatea de Medicina si Farmacie Iuliu Hatieganu Cluj,²Spitalul Clinic Judetean de Urgenta Cluj- Napoca

BACKGROUND: Pseudomyxoma peritonei (PMP) is a very rare type of cancer characterized by the accumulation of gelatinous ascites with mucinous implants in the peritoneal cavity, colloquially referred to as "jelly belly". In other words, it is the peritoneal dissemination of mucus-producing neoplasm, most frequently from the appendix. Because of the nonspecific symptoms and the slow progression of the disease, it is often misdiagnosed or discovered incidentally during the investigation of other medical conditions, usually in a relatively advanced stage. Its atypical presentation, mimicking conditions such as irritable bowel syndrome, makes this clinical entity a big challenge for us, both in diagnosis and management, as will be seen in the case presented below. **CASE PRESENTATION:** A 50 year old male presented to the Emergency Room complaining of persistent abdominal pain, especially in the epigastric region, fatigue, anorexia, muscle weakness and a significant weight loss of 16 kg over two months. Physical examination revealed a distended abdomen, high sensitivity to palpation, palpable hard masses in the epigastrium, hypogastrium and right flank, as well as non-shifting flank dullness upon percussion. The patient had no relevant medical or family history. A contrast-enhanced computed tomography (CECT) scan of the chest, abdomen and pelvis showed mucinous deposits that caused a 'scalloping' effect on the surface of the right hepatic lobe; similar collections were found around the spleen, stomach, mesentery, greater omentum, paracolic gutters and pelvis. These are highly suggestive of PMP. In the hypogastrium, the CECT scan also showed multiple hyperechoic nodules infiltrating the mesenteric and omental adipose tissue, raising suspicion of peritoneal carcinomatosis. Cytological analysis of the ascitic fluid revealed large atypical cells with hyperchromatic nuclei and irregular nuclear membranes. A biopsy of a peritoneal lesion was requested. Tragically, the patient succumbed to his illness three days post-discharge. **CONCLUSION:** Given its resemblance to more benign gastrointestinal diseases and its low incidence rate, suspicion of PMP in patients with unexplained ascites, weight loss and abdominal masses is crucial. Finally, this case highlights the diagnostic challenges posed by pseudomyxoma peritonei, as well as the importance of early detection through imaging and histopathological techniques in order to improve prognosis in affected patients.

22. IDENTIFYING PATIENTS AT RISK FOR INTERSTITIAL LUNG DISEASE IN SYSTEMIC SCLERODERMAMiruna-Antonia Ilea¹, Miruna Koşa¹, Alexia Ianoş¹Laura Muntean¹¹"Iuliu Haţieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

BACKGROUND: Systemic scleroderma (SSc) is a rare autoimmune connective tissue disease, characterized by vascular involvement and fibrosis that affects the skin and multiple internal organs. Interstitial lung disease (ILD) is the most common cause of death among patients with systemic sclerosis, with a prevalence of up to 30% and a 10-year mortality of up to 40%. **CASE PRESENTATION:** A 54-year-old man, former smoker, presented with a 2-years history of Raynaud phenomenon, arthralgia, dysphagia and fatigue. Physical examination revealed induration of the skin affecting the fingers (sclerodactyly), limbs and trunk, pitting scars on multiple digital tips and fine inspiratory crackles ("velcro-type") at the lung bases. Immunological tests showed high titres of anti-Scl-70 antibodies and the patient was diagnosed with diffuse cutaneous systemic sclerosis (dcSSc). High-resolution computed tomography (HRCT) scan of the lungs showed reticular abnormalities and areas of ground glass opacities suggestive of SSc-associated ILD. Spirometry showed restrictive ventilatory dysfunction. In evolution the patient developed progressive shortness of breath on exertion, limiting the activities of daily living. HRCT reevaluation after 3 years showed progressive fibrosing ILD, with extension of reticular abnormalities and honeycombing lesions. During the course of the disease, the patient was treated with multiple immunosuppressive agents (methotrexate, mycophenolate mofetil, and cyclophosphamide), and later, an antifibrotic agent (nintedanib) was added. **CONCLUSION:** Early identification of patients at high risk for development and progression of ILD is essential in the management strategy of patients with SSc. Treating SSc-ILD is challenging, as high-risk or rapid progressors require an intensified treatment strategy, often involving a combination of immunosuppressive and antifibrotic agents.

23. A RARE CASE OF SIGMOID COLON DUPLICATIONMagda-Melisa Micu¹, Radu-Alexandru Ilieş¹Umaila Al Wahaibi, MD²¹University of Medicine and Pharmacy, Sciences and Technology of Targu Mures, Romania²Sultan Qaboos University Hospital

BACKGROUND: Gastrointestinal duplications are rare congenital anomalies that can occur anywhere along the digestive tract, often presenting as an abdominal mass in newborns. The standard treatment involves surgical resection, with careful preservation of the shared blood supply of surrounding tissues. However, sigmoid duplication is an especially rare finding in medical literature. In this report, we describe a case of sigmoid duplication and demonstrate how appropriate surgical management led to a successful outcome.

CASE PRESENTATION: A 33-year-old female presented to Sultan Qaboos University Hospital with chronic constipation, nausea, and vomiting. Her appearance was normal, with no other medical condition or hereditary diseases. Despite being prescribed antiemetic and laxative medications at her local hospital and receiving recommendations for physical activity to enhance intestinal motility, her symptoms persisted. She was admitted to our hospital for further evaluation. Imaging investigations, including a magnetic resonance defecography, showed contraction of the puborectalis muscle, a medium-sized anterior rectocele, and moderate vaginocoele formation. A computed tomography scan revealed a mass (20/9/7 cm) originating from the sigmoid colon and extending to the hepatic flexure, displaying an air-fluid level. The patient consented to exploratory laparoscopic intervention, with a presumptive diagnosis of diverticulum, volvulus, or sigmoid duplication under consideration. During the procedure, the mass was found adherent to the sigmoid colon, extending toward the right upper quadrant of the abdomen. The duplicated segment and the affected portion of the sigmoid colon were resected through a sigmoid colectomy, followed by a stapled end-to-end colo-colonic anastomosis. Histopathological examination confirmed the definitive diagnosis of sigmoid duplication without malignancy. The patient had an uneventful recovery and was discharged in good condition five days post-surgery. **CONCLUSION:** Duplications of the gastrointestinal structures are rare congenital anomalies which are often diagnosed in childhood, but may go unrecognised until adulthood. For adults presenting with symptoms like chronic constipation, intestinal duplications can be included in the differential diagnosis.

24. THE DYNAMICS OF BILATERAL RAPIDLY PROGRESSIVE OSTEOARTHRITIS OF THE HIP: A CASE REPORT

Dan Paul Ioan¹, Andrei Oprea¹, Alexandru Dobrin¹

Prof. Tudor Sorin Pop, MD, PhD¹

¹University of Medicine, Pharmacy, Sciences and Technology of Târgu Mureș

BACKGROUND: Rapidly Progressive Osteoarthritis of the Hip (RPOH) is a condition characterized by rapid destruction of the femoral head, typically within a 12- to 18-month period, leading to severe loss of hip function. Bilateral RPOH is rare but has a significant clinical impact. **CASE PRESENTATION:** A 50-year-old male presented with bilateral severe hip pain, reduced hip joint mobility, and an antalgic posture. Symptoms began two years prior and became unmanageable with analgesics. The patient had no congenital pathologies or other comorbidities. A plain pelvic radiograph revealed severe osteoarthritis, grade II on the right side (partial femoral head flattening, joint space narrowing, and hip ascension) and grade III on the left side (complete destruction of the femoral head, significant hip ascension, and lack of anterior acetabular wall). Total hip replacement was recommended, starting with the right hip due to clinical priorities. One month later, a cementless total hip replacement was performed on the right side. Preoperatively, the patient Harris Hip Score (HHS) was 40.2 ± 5.1 . At the six-month postoperative follow-up for the right hip, the HHS improved significantly to 85.3 ± 4.7 . Radiographs showed good osseointegration (Engel score - 22), and the destruction on the left side had stabilized. A second non-cemented total hip replacement was performed on the left side, with optimal leg lengthening confirmed by both radiographs and clinical evaluation. Six months postoperatively, the HHS for the left hip improved from 38.6 ± 6.0 to 82.9 ± 5.4 . **CONCLUSION:** This case underscores the severe functional decline associated with bilateral RPOH and highlights the benefits of timely total hip replacement. Postoperative improvements in HHS and mobility, along with pain relief, significantly enhanced quality of life. Early diagnosis and prompt intervention are essential to prevent further functional deterioration in RPOH cases, particularly with Zsigmondy grade II and III involvement.

25. RIGHT UPPER QUADRANT SUBCUTANEOUS FISTULA FROM ACUTE CHOLECYSTITIS

Maria Militaru¹, Radu Sabău¹, Maria Resetar¹

Prof. Călin Ionescu, MD, PhD^{2,3}

¹University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca

²5th Surgical Clinic, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca

³Municipal Clinical Hospital Cluj-Napoca

BACKGROUND: Gallstones represent a very frequent pathology. Acute cholecystitis is one of its most frequent complications, leading to surgery. Fistulae from the gallbladder to adjacent organs are very rare, one of the rarest being the cholecystocutaneous fistula. A systematic review from 2020 found less than 100 cases in the medical literature, encouraging us to present this case. **CASE PRESENTATION:** An 84-years-old male, non-smoker, without significant alcohol intake, treated for arterial hypertension and prostate hypertrophy, presented to the Emergency Ward for the appearance 2 days ago of a painful lump in the right upper quadrant (RUQ) and low grade fever. In the last 2 weeks he has been experiencing RUQ dull pain. The physical exam found an 8 cm soft lump, showing mild tenderness. The laboratory relevant findings were: leukocytosis, neutrophilia, elevated C reactive protein, liver cytolysis and cholestasis. The abdominal ultrasonography (US) showed a viscous, fluctuating fluid collection in the RUQ, communicating through the muscular abdominal layer in an amorphous collection situated between the liver and the hepatic flexure of the colon. The computed tomography (CT) set the diagnosis of perforated acute cholecystitis, contained between the liver and the hepatic flexure, fistulized in the subcutaneous fat through the muscles and fascia, but no gallstones were identified. After one week of antibiotic treatment the clinical status improved mildly, the biochemical liver tests improved, but the inflammation markers did not improve significantly. Surgical exam advised the operation. Median laparotomy exposed a sub-hepatic abscess from perforated cholecystitis, fistulized through the abdominal wall. Partial cholecystectomy could be done, the abscess was drained, and 2 gallstones measuring 1 cm each were found. The subcutaneous pouch was also drained through the fistulous orifice in the muscular layer. Postoperative evolution was uneventful, and the patient was discharged from the hospital. **CONCLUSION:** Cholecystocutaneous fistula is a complication of acute cholecystitis very rarely reported. The patient we presented came to medical attention before skin fistula could occur, leading to a particular clinical and imaging picture. Such cases require collaboration between medical, radiology and surgical teams.

26. UNCOMMON AND AGGRESSIVE GLIAL TUMOR: GLIOSARCOMA – A CASE REPORT

Cristiana-Teodora Isac^{1,2,3}, Maria-Bianca Andrei^{1,2}, Alexandru Călin^{1,2}

Gabriela Florența Dumitrescu, MD, PhD²

¹"Grigore T. Popa" University of Medicine and Pharmacy,

²Clinical Emergency Hospital "Prof. Dr. Nicolae Oblu" Iași

³Clinical Emergency Hospital "Prof. Dr. Nicolae Oblu" Iași

BACKGROUND: Gliosarcoma is a rare and highly malignant variant of glioblastoma, accounting for only 2-8% of all these tumors. Because clinical presentation and radiological features are similar with those of a glioblastoma wild-type, there is a need for other markers to differentiate these two glial tumors. **CASE PRESENTATION:** A 73-year-old female presented with confusion syndrome, headaches and cognitive difficulties. Her medical history included grade 2 hypertension, class III obesity, and functional renal insufficiency. Computed tomography revealed a right frontal expansive intracranial lesion. MRI indicated a large mixed lesion in the frontal lobe affecting surrounding brain structures, raising suspicion of a glioblastoma, and incidental sinus and nasopharyngeal cysts. The patient underwent quasi-complete microscopic ablation of the tumor via right frontoparietal craniotomy with extradural drainage. The intraoperative examination suspicioned a glioblastoma. Microscopic exam identified a biphasic tumor, displaying areas of tumoral glial cells intermixed with areas of sarcomatous differentiation. Histochemical special stainings revealed PAS staining positivity in the cytoplasm of the tumor cells in the sarcomatous area. Also, silver impregnation staining highlighted a rich network of reticulin fibers in the sarcomatous areas, but no reticulin fibers in the glial tumoral areas. Immunohistochemistry showed differences between those two distinct patterns: GFAP+, vimentin-, Olig 2-, IDH1-, ATRX+, (in the astrocytic tumor area), and Vimentin+ and CD34+ (in the sarcomatous areas), with p53+ in 10% of the tumor cells and a high proliferation index (Ki67= 20%) throughout the tumor. The final pathological diagnosis was: diffuse adult-type glioma, gliosarcoma subtype, IDH1 wild-type, grade 4 of malignancy (the 2021 WHO CNS classification). Postoperatively, the patient remained conscious, cooperative, and afebrile; however, three days post-surgery, she developed external CSF leaks at the surgical site, necessitating a lumbar drainage that was removed after three days. The patient was discharged with recommendation for radiotherapy treatment. **CONCLUSION:** This case underscores the diagnostic challenges and complexities of managing a cerebral gliosarcoma, emphasizing the importance of multidisciplinary approaches in treatment and monitoring for complications. An accurate diagnosis needs histochemical and immunohistochemical stainings that identify the glial component (GFAP+, silver impregnation-) and sarcomatous component (CD34, silver impregnation+), thus differentiating it from other glial tumors.

27. SURGICAL TREATMENT FOR GALLBLADDER CANCER: A CASE REPORT

Miruna Koşa¹, Miruna-Antonia Ilea¹, Alexia Ianoş¹

Prof. Nadim Al Hajjar, MD, PhD²

¹Iuliu Hațieganu University of Medicine and Pharmacy,

²Regional Institute of Gastroenterology-Hepatology

BACKGROUND: Gallbladder cancer is a rare type of malignant neoplasm, accounting for 1.2% of all global cancer diagnoses and 1.7% of all cancer-related deaths. Signs and symptoms often appear only in the advanced stages and include nausea, vomiting, bloating, pain above the stomach and jaundice, all common symptoms in other gallbladder-related diseases and various other disorders affecting the digestive system. Therefore, gallbladder cancer is difficult to detect and diagnose early. **CASE PRESENTATION:** We present the case of a 57-year-old male patient diagnosed with gallbladder cancer. Other comorbidities include arterial hypertension, hypertensive cardiomyopathy, grade D reflux esophagitis and a large hiatal hernia. Multiple imaging tests, including an abdominal and pelvic CT scan and ultrasonography, were performed. The results showed the lack of delimitation of the tumor mass from the duodenal wall, the expansion of the tumor into the adjacent liver parenchyma and invasion of the bile duct, with the narrowing of the lumen. Celiac and paraduodenal adenopathies were also discovered. Summarizing the diagnosis, the patient suffers from a gallbladder tumor in the infundibulo-cystic region with invasion into the duodenum, liver and the main bile duct. Since the tumor was resectable, a complex six-hour-long surgery was performed. The procedure included an exploratory laparotomy, resection of the gallbladder and segments V and IVb of the liver en-bloc, and a suprapapillary antro-duodenal resection. Several anastomoses were performed, including a Roux-en-Y hepaticojejunostomy, a transmesocolic gastrojejunal anastomosis and an enteroenterostomy. Retrovesical, subhepatic, paraduodenal and subcutaneous drainage were required. Thanks to the favorable evolution of the patient, after 2 days in the Intensive Care Unit, he was transferred to the surgical unit. Unfortunately, on the seventh postoperative day the patient suffered a hemorrhagic shock of the superior arcade of the head of the pancreas. He survived this complication and he required a surgical reintervention which was successful. **CONCLUSION:** The peculiarity of this case is that the tumor was resectable, a very rare situation, and that the patient survived a postoperative hemorrhagic shock. It is also worth mentioning that, although gallbladder cancer is the only type of digestive cancer that occurs more frequently in females than males, our patient is a man.

28. UNPREDICTED EMERGENCY SURGERY AFTER IN VITRO FERTILIZATION – CASE REPORT AND LITERATURE REVIEW

Ioana-Marta Melinte¹, Marian-Andrei Melinte, Ilinca-Octavia Misaras¹

Prof. Lucian Puscașiu, MD, PhD¹

¹University of Medicine, Pharmacy, Sciences and Technology 'George Emil Palade' Targu Mures

BACKGROUND: In vitro fertilization (IVF) has emerged as the most effective treatment for infertility, but despite its increasing popularity and widespread availability, it is not without complications. Associated risks, such as ovarian hyperstimulation syndrome, multiple gestations and preterm birth, have gained considerable attention due to their negative impact on maternal and fetal outcomes. **CASE PRESENTATION:** We present the case of a 33-year-old female with secondary infertility and a history of bilateral tubal occlusion, diagnosed by laparoscopy. The patient underwent IVF with controlled ovarian stimulation, followed by a single in utero fresh embryo transfer (ET). Fourteen days post-ET, a urinary pregnancy test was positive. Three weeks after ET, the patient reported vaginal bleeding and abdominal pain. Clinical evaluation and transvaginal ultrasonography raised suspicion of a miscarriage. The decision was close monitoring until a complete spontaneous abortion. After three days more, the patient developed severe abdominal pain and lipothymia, prompting her admission to the emergency department with a diagnosis of hemoperitoneum by ultrasound. Laparoscopy revealed an ectopic pregnancy located in the left fallopian tube, necessitating a total left salpingectomy. Prophylactic right salpingectomy was also performed. The patient subsequently recovered well postoperatively. **CONCLUSION:** According to the medical literature, ectopic pregnancy after IVF occurs in 2-5% of pregnancies, being much more frequent after fresh compared to frozen embryo transfer. EP is a life-threatening condition and remains a leading cause of maternal mortality in the first trimester, accounting for 5-10% of all maternal deaths worldwide, in both developed and developing countries. Although IVF involves direct embryo transfer into the uterine cavity, bypassing the fallopian tubes, ectopic pregnancies still occur after IVF, probably because of a migrated embryo. Transvaginal ultrasound is not the most reliable diagnostic tool by itself to locate an early pregnancy and should always be combined with serum human chorionic gonadotropin measurements. Despite its rarity, ectopic pregnancy must always be considered as a potential complication due to the risk of tubal rupture, which can lead to significant internal hemorrhage and serious morbidity.

29. CHEMOTHERAPY-RELATED COMPLICATIONS: MANAGING BOTRYOMYCOSIS IN ONCOLOGY

Ionela-Bianca Nemțan-Nisioiu¹, Mara-Lorena Imbrea¹, Andrada Toncu¹

Asst. Lect. Irina Mihaela Jemnoschi Hreniuc, MD, PhD^{1,2}

¹Grigore T. Popa University of Medicine and Pharmacy

²Clinical Hospital C.F. Iasi

BACKGROUND: Chemotherapy is an important treatment in oncology but can lead to a wide range of mild to severe side effects on the body, including myelosuppression. It compromises the immune system and can provide mucocutaneous reactions related to chemotherapeutic agents. One potential complication of chemotherapy is the development of infections, including botryomycosis, a rare fungal infection that affects skin structures and can cause necrosis and ulceration. Botryomycosis is caused by bacteria with *Staphylococcus aureus* usually the major causal agent, 40% and *Pseudomonas aeruginosa* ranking second in frequency, 20%. **CASE PRESENTATION:** We present the case of a 79-year-old female who was admitted to the department of plastic and reconstructive surgery following a dermatological consultation, presenting multiple paronychia complicated with botryomycosis. She had a known history of bronchopulmonary cancer diagnosed in 2020, for which chemotherapy has been initiated in 2021. Clinical examination revealed the presence of paronychia on digits 2, 3, and 4 of both the left and right hands, as well as on digits 1 and 3 of the left foot and digits 1, 2, and 3 of the right foot. Excision and debridement of the lesions on each digit were performed, and samples were sent for examination. Culture from lesions revealed growth of *Staphylococcus aureus* and *Pseudomonas aeruginosa*, prompting the initiation of antibiotic therapy with Ciprofloxacin. Currently, the patient exhibits ulcerative lesions in the subpectoral and periumbilical regions. A positive aspect of this case is that the tumor remains stable following chemotherapy. **CONCLUSION:** This case illustrates the impact of chemotherapy on the health of appendages and emphasizes the importance of careful monitoring of oncological patients to manage associated complications. Surgical interventions and antibiotic therapy are essential to prevent further deterioration of the health status of patients with compromised immune systems. However, chemotherapy also has beneficial effects, as in our patient's instance, the tumor remains stable.

30. HUNTER PROCEDURE: A WACKY JOURNEY THROUGH TENDON REPAIR AND OTHER SKIN SURPRISES!Andreea-Ioana Feraru¹, Silviu Vultur, MD², Mara Nemeş, MD²Lect. Dorin Constantin Dorobanţu, MD, PhD²¹University of Medicine and Pharmacy from Târgu-Mureş²Târgu Mureş County Emergency Clinical Hospital

BACKGROUND: Silicone tendon implants are utilized as the main materials in the first part of the Hunter's two-stage procedure for reconstructing flexor and extensor tendons in patients with severe hand tendon injuries. **CASE PRESENTATION:** We present the case of a 44-year-old woman admitted to the Plastic Surgery Department in Târgu Mureş with a 30-year-old injury affecting the deep and superficial digital flexor tendons (DDFT & SDFT) of the second finger on her left hand. Notably, this patient, a pianist by profession, compensated for limited flexion in the second finger by utilizing the flexor tendon of the third finger. Surgery began with a Z-shaped incision to create local flaps, followed by identifying cicatricial blocks at the metacarpophalangeal (MCP) and proximal interphalangeal joints (PIP). Proximal tendon stumps were located at the PIP and mediopalmar levels. These stumps were excised and the tendon ends were prepared by shortening the proximal SDFT stump by 2 cm. A synthetic tendon prosthesis was then placed from the base of the third phalanx to the middle palmar region (stage I), and the A1 pulley was reconstructed using the SDFT. During the second stage, despite no preoperative signs of inflammation or infection, granulomatous tissue was found around the prosthesis and the hypertrophied periprosthetic capsule, indicating a foreign body reaction, those were removed and sent for histopathological examination. An incision on the volar forearm at the distal third allowed for harvesting a tendon graft from the SDFT of the second finger, which was used to reconstruct the DDFT of the same finger. The DDFT graft was reattached with transosseous sutures at the base of the second finger, completing the reconstruction of the A1, A2, and A4 pulleys. The patient subsequently developed sarcoidosis and psoriasis, underscoring potential immune complication. **CONCLUSION:** The Hunter tendon repair remains a valuable technique for tendon reconstruction, offering a structured, two stage approach. However, this case underscores the risk of immune complications and highlights the need of vigilance and careful patient monitoring in post-operative recovery.

31. DEEP INFILTRATING ENDOMETRIOSIS: A RARE CAUSE OF INTESTINAL OBSTRUCTIONCristiana Guzu¹, Lorin-Manuel Pirlog¹, David-Ioan Hirşman¹Florin-Vasile Mihăileanu^{1,2}¹'Iuliu Haţieganu' University of Medicine and Pharmacy, Cluj-Napoca²Discipline of Surgery II, 'Iuliu Haţieganu' University of Medicine and Pharmacy, Cluj-Napoca

BACKGROUND: Endometriosis is a benign condition that frequently occurs during the reproductive period, defined by the presence of endometrial tissue outside the uterus. Endometriosis can be found anywhere in the peritoneal cavity, structures located further away in the peritoneal cavity, such as the cecum and the ileocecal valve being less commonly affected. Deeply infiltrative endometriosis associated with large intestine obstruction is rare and can be mistaken for intestinal adenocarcinoma. **CASE PRESENTATION:** A 35-year-old female, nulliparous, with no known medical history, presented to the emergency department with diffuse abdominal pain, nausea, vomiting, and absence of intestinal transit. Physical examination revealed distended abdomen, without scars or abdominal wall hernias, a negative Blumberg sign, and present bowel sounds on auscultation. FAST ultrasonography detected distension of the intestinal loops on the left abdominal flank. This finding was confirmed by an abdominal radiography, followed by an abdominopelvic CT scan to establish the etiology. During the exploratory laparotomy, a tumor mass involving the cecum, ileocecal valve, and the right adnexa was identified. The formation was interpreted as malignant, leading to a right hemicolectomy and right adnexectomy. Histopathological examination revealed an extensive area of endometriosis and fibrosis in the resected specimen. **CONCLUSION:** Endometriosis is not a malignant pathology, but can easily be mistaken for one. The patient's age can be a differential diagnostic element, as colorectal cancer predominantly affects older patients. A second element is the direction of invasion in the intestinal wall, with endometriosis invading from the outside in, unlike primary malignant processes. Additionally, a clinical history of hematochezia is uncommon in cases of endometriosis. The diagnosis of large bowel endometriosis remains challenging to establish preoperatively. Despite imaging advancements, laparoscopy combined with lesion excision and histological examination remains the gold standard for a definitive diagnosis of endometriosis.

Powerpoint Session
ORIGINAL STUDIES

01. **MATRIX METALLOPROTEINASES: NONPROTEOLYTIC ACTIVATION AND ITS RELEVANCE IN MEDICINE**

Teodor Cârloaia¹, Iustina Roşu¹, Claudia Moldoveanu^{2,3}

Prof. Vlad-Alexandru Toma, MD, PhD^{2,3}

¹"Carol Davila" University of Medicine and Pharmacy, ²Institute of Biological Research Cluj-Napoca, ³Department of Molecular Biology and Biotechnology, "Babeş-Bolyai" University

INTRODUCTION: Matrix metalloproteinases (MMPs) are a family of zinc-dependent extracellular matrix (ECM) remodeling endopeptidases which have the function to degrade almost every component of the ECM. The aim of the research is to investigate the role of 3 molecules associated with nitro-oxidative stress, such as nitrite, peroxide and peroxynitrite, in the activation mechanism of metalloproteinases 2 and 9 respectively. MMPs exist in the inactive form of pro-enzymes and in the activated form, through the proteolytic or nonproteolytic pathway. Literature data, but also previous data obtained by us, suggested the key role of reactive nitrogen species in the nonproteolytic activation of MMPs.

MATERIALS AND METHODS: In order to investigate the modulatory action on MMPs of the above-mentioned molecules, the zymographic method was used to highlight the catalytic activity of MMP2 and MMP9 in the absence and presence of nitrite, peroxide and peroxynitrite respectively. In parallel with the zymographic analysis, an electrophoretic migration staining with Coomassie Brilliant Blue was performed. Data were integrated using Image J software and electrophoregrams were compared, with significant differences set at a p value of < 0.05. **RESULTS:** Examination of the zymography showed that in the presence of nitrite there was a complete activation of MMP2 while peroxide or peroxynitrite did not lead to this result. Normally, we would expect peroxynitrite to be the most potent activator of MMP2 but it is possible that the concentrations of the nitro-oxidative stress promoting molecules were either too high or too low, so that its rapid generation equaled its degradation. Thus, the stabilisation of vascular-induced nitric oxide (NO) as nitrite led to the total activation of MMP2. **CONCLUSION:** The results lead us to the conclusion that the reactive nitrogen species (RNS), as well as reactive oxygen species (ROS) play a key role in the nonproteolytic activation of MMP2. Based on these findings, in a clinical context, vasodilator therapy with nitrates, nitrosative stress generated in various toxicoses (e.g. hydrazines, NSAIDs), the evolution of atherosclerosis, hemolytic anemia syndromes when free Hb reacts with NO and generates reactive species of N are future zones of interest. Acknowledgement: Part of the current research was sustained through the AOSR-TEAMS 2024/2025 research grant, domain: Medical Sciences.

02. **MORPHOMETRIC AND QUANTITATIVE CHANGES OF BRONCHOASSOCIATED LYMPHOID TISSUE UNDER THE INFLUENCE OF SODIUM GLUTAMATE, SODIUM NITRATE AND PONCEAU 4R**

Taras Demchenko¹, Yehor Rybalche¹

Kostyantyn Shevchenko²

¹Poltava State Medical University, ²Department of Biology, Poltava State Medical University

INTRODUCTION: It is known that nowadays the using of food additives causes many contradictions due to the lack of thorough research on their effects on the body, especially in conditions of combined action. Currently, the most common food additives are Sodium glutamate, Sodium nitrate and Ponceau 4R. It is especially important to study their harmful effect on the broncho-associated lymphoid tissue (BALT), as it protects the body from various antigens.

MATERIALS AND METHODS: 30 white outbred male rats were used. Control group (10 animals) used ordinary drinking water. Experimental group (20 animals) received daily Sodium glutamate, Sodium nitrate and Ponceau 4R in doses allowed in food industry. Animals were removed from the experiment on the 1st and 4th weeks. Fragments lungs were sealed in Epon-812. Semi-thin sections were stained with methylene blue. The external diameter and thickness of the broncho-associated lymphoid capsule were measured tissue, number of plasma cells, number of macrophages, the number of lymphocytes and the number of reticulocytes. Statistical data processing was carried out in Excel program. **RESULTS:**

When conducting a morphometric study of the structural components of the lungs, it was established that in the control group the external diameter of the BALT was $392.15 \pm 2.64 \mu\text{m}$, the thickness of the capsule was 28.65 ± 1.52 , the number of macrophages was 121 ± 4.62 , and the number of lymphocytes was 249.53 ± 8.33 , the number of plasma cells 180.7 ± 6.79 , the number of reticulocytes 29.00 ± 0.11 . After 1 week of the experiment, the outer diameter significantly increased by 73.55%. The average thickness of the capsule became smaller by 14.31% ($p < 0.05$). The number of macrophages was higher by 2.11% ($p < 0.05$). The number of lymphocytes significantly increased by 56.11% compared to its values in the control group ($p < 0.05$). The average number of plasma cells significantly increased by 78.08% ($p < 0.05$). The number of reticulocytes was lower by 28.26% ($p < 0.05$). After 4 weeks, the external diameter of the broncho-associated lymphoid tissue decreased by 30.30%, relative to the previous period of the experiment, and was greater by 20.96% relative to the values of the control group ($p < 0.05$). The thickness of the capsule decreased according to the results of the previous term by 5.99%, which was 19.44% less than the indicators of the control group ($p < 0.05$). The number of macrophages was 10.56% higher than the results of the previous term, which was 12.89% higher than the control group ($p < 0.05$). The number of lymphocytes decreased by 24.07% compared to the previous period and was 62.52% less than the value in the control group ($p < 0.05$). The number of plasma cells was 0.31% more than in the 1st week of the study and in 78.63% significantly increased over the indicators in the control group of rats ($p < 0.05$). The number of reticulocytes increased from the results of the previous term by 65.34%, which was 18.59% more than the indicators of the control group ($p < 0.05$). **CONCLUSION:** The average size of lymphoid follicles gradually increased as a result of exposure to the complex of food additives, but the thickness of the capsule decreased during observation. During the first week of the experiment, the number of plasma cells almost doubled and remained stable for 4 weeks. The average number of macrophages was not significantly different from the indicators of the control group. As a result of the stimulation of

the humoral link of immunity, the activation and differentiation of lymphocytes into plasma cells took place, as a result of which the number decreased.

03. THE NEURAL FINGERPRINT OF LETTERS: DECODING LETTERS AND FONTS FROM EEG SIGNALS

Szilárd-Attila Majercsik¹

András Benyhe, MD, PhD²

¹George Emil Palade University of Medicine Pharmacy Science and Technology of Târgu Mureș, ²University of Szeged, Department of Physiology

INTRODUCTION: Letter recognition represents the most elementary functional unit of reading, constituting a fundamental building block for comprehending the written world. While several theoretical models have been proposed to elucidate the precise chronological sequence of reading, our understanding of the electrophysiological cues underlying this process remains limited. Do the cortical representations of different letters exhibit distinctive properties? Does a change in any letter property influence the cortically evoked responses? Can the quality of a letter be predicted by examining brain waves alone? **MATERIALS AND METHODS:** A 64-channel (EEG) was conducted on 26 university students (21 female, mean age: 21.8 ± 1.8). During the recording, subjects observed images of different letters (40 individual stimuli, each presented 40 times) while maintaining attention on a detection task. EEG data (individually elicited responses) were grouped according to different stimulus qualities and separated using a machine learning algorithm. The efficacy of this separation was tested over time using cluster-based statistics (10,000 permutations). **RESULTS:** The results demonstrated that the letter identity (a, e, f, g), letter size (lowercase, uppercase) and font (five visually distinct fonts) were significantly distinct in the typical periods of the response elicited by the letter appearance. Furthermore, the discrimination of letter identity was successfully achieved when the decoding algorithm was trained on lowercase data exclusively, with the correctness of the results then verified using uppercase data (and vice versa). **CONCLUSION:** The cortical representation of letter identity starts surprisingly early, at the same time as the first visual evoked response component (~100 ms). A similar pattern of cross-validated analysis on lower and upper case letters supports the abstract nature of the representation, as the visual appearance of our lower and upper case letters differed greatly. Furthermore, our surprising result is that the distinctness of the letters, which differ in their basic visual properties, does not start to emerge until later (~150 ms).

04. THE INCIDENCE AND VARIABILITY OF THE PERSISTENT METOPIC SUTURE IN A POPULATION OF CRANIA FROM THE INTER-WAR POPULATION

Maria VOINEA¹

Assoc. Lect. Octavian MUNTEANU, MD, PhD², Asst. Lect. Andra Băloiu, MD, PhD

Affiliation: ¹Carol Davila University of Medicine and Pharmacy,

²University Emergency Hospital Bucharest

INTRODUCTION: The metopic suture represents a physiological fibrous joint present at birth, which stretches from the nasion to the bregma. It is also called interfrontal or median frontal suture and may appear incomplete on some crania. This study's objective is to research the suture's occurrence in adults and certain associated implications. Normally, its fusion starts at about 3 months of age, with its completion at around 9 months of age. Its variability and presence implicate numerous possible consequences. **MATERIALS AND METHODS:** The study was conducted in the Department of Anatomy of "Carol Davila" University of Medicine and Pharmacy on 300 subjects pertaining to the "Francisc Rainer" crania collection. An initial external analysis was conducted, in order to evaluate the closure status, morphology and structure of the suture. Afterwards, cranial computed tomographies (CT) were performed, completed by high precision equipment, Canon Aquilion One 64 Slice, also enabling us to assess 3D reconstructions, which uncover potential abnormalities caused by the persistence of the suture, or even the premature fusion of the component bony structures. **RESULTS:** We detected 17 crania with persistent metopic suture. The persistence of the metopic suture is often associated with different conditions, such as: abnormalities and unilateral or bilateral agenesis of the frontal sinus, thus creating difficulties or possible confusion in the evaluation of the concerning structures or even possible complications. **CONCLUSION:** A present metopic suture during the adult life can also be mistaken on a scan for a vertical fracture of the cranium, therefore having implications in radiology. Moreover, it can lead to the formation of wormian bones within the calvaria. On the other hand, the premature fusion of it, termed metopic synostosis, often leads to trigonocephaly. Persistent metopic suture is a rare condition. However further research concerning the subject can result in a more profound understanding of the surrounding causes and conditions favorable to metopic variability, therefore enhancing diagnostic accuracy and patient outcomes regarding craniofacial abnormalities.

Author-submitted correction:

In the results section, the updated information is that we found a total of 42 crania with persistent metopic sutures out of a total of 470 examined subjects.

05. BRAIN GLYCOSYLATION AND PARKINSON'S DISEASE DEVELOPMENT - MECHANISMS AND PROSPECTS

Iustina Roşu¹, Claudia Moldoveanu², Radu Moldovan³

Scientific Coordinator: Prof. Vlad-Alexandru Toma MD, PhD³

¹Carol Davila" University of Medicine and Pharmacy,

²Department of Molecular Biology and Biotechnology, "Babeş-Bolyai" University of Cluj Napoca, ³Institute of Medical Research and Life Sciences-MEDFUTURE

INTRODUCTION: The growing incidence of both Parkinson's disease (PD) and cardiometabolic diseases, especially type 2 diabetes, is undeniable. Moreover, there is a correlation of 40% between the two conditions. We estimate a key role of dopamine in the glycosylation processes in the etiopathology of PD. The experimental model was achieved by MPTP-induced dopaminergic lesion. **MATERIALS AND METHODS:** The experimental part was carried out with CD21 mice randomly divided (n = 13) into MPTP and Control groups. MPTP was administered at 25 mg/kg b.w. sequential (1 dose each 2 days) and daily for 7 days for all MPTP mice. The whole brain was dissected out and cortical and striatal areas were prepared first of all for immunohistochemical assay for α -synuclein and GFAP, whereas tissue homogenates were subjected to ELISA α -synuclein and dopamine (DA) assay, gel electrophoresis in both native and denaturing systems, treated with periodic acid-Schiff reagents and silver stain protocol, and finally untargeted metabolomic analysis. Experimental data was also evaluated for the correlation coefficients and PCA using the PAST software. **RESULTS:** This research shows that the protein-free carbohydrate level significantly decreases in the MPTP-treated cortical homogenate when compared to control, as seen on the Schiff stain. As for the striatum homogenates, the slight increase of protein-free carbohydrates in MPTP when compared to control is backed up by the metabolomic studies, which show increasing levels of free carbohydrates in MPTP-treated striatal homogenates when compared to control. The semi-quantitative analysis of glycoproteins, provided by the silver stain, highlights at 15-20 kDa a weaker signal in the MPTP striatal homogenate as opposed to control in the native gel electrophoresis. However, the opposite occurs in SDS-PAGE, as the signal increases in the MPTP striatal homogenate when compared to control. **CONCLUSION:** The results lead us to the conclusion that the PD pathology involves most probably a tetrameric or a pentameric glycoprotein complex, of which the glycosylation is deprived (either slowed down or prevented). SDS-PAGE and metabolomic studies highlight the role of fundamental metabolic pathways of carbohydrates, such as protein glycosylation and protein-free carbohydrates. In the light of these findings, PD has also a significant impact on the cortex, which is less expected than the one on the striatum, a conclusion which suggests that further studies need to be implemented.

Author-submitted corrections:

As for the striatum homogenates, the slight increase of carbohydrate-associated proteins in MPTP when compared to control is backed up by the metabolomic studies, which show increasing levels of glucogenic aminoacids in MPTP-treated striatal homogenates when compared to control.

Acknowledgement: This research received support from a GTC grant awarded by Babes-Bolyai University (Grant No. 32939/22.06.2023) and AOSR-TEAMS-III 2024-2025 grant.

06. COMPREHENSIVE MORPHOMETRIC ANALYSIS AND 3D MODELING OF TRIANGULAR RECESS

Maria-Bianca Andrei¹, Alexandru Călin¹, Cristiana-Teodora Isac¹

Lect. Alin-Horațiu Nedelcu, MD, PhD¹

¹ "Grigore T. Popa" University of Medicine and Pharmacy Iași

INTRODUCTION: The triangular recess is a small anatomical indentation in the anterior wall of the third ventricle, situated between the fornix columns and the anterior commissure. This debated feature serves as a neuroanatomical reference point and is associated with cerebrospinal fluid pathways, raising questions about its existence and structure. Its identification is crucial in endoscopic neurosurgery for navigating ventricular procedures. This study aims to confirm the existence of the triangular recess and provides a detailed morphometric analysis, contributing a novel 3D anatomical model. **MATERIALS AND METHODS:** This study presents a quantitative and qualitative analysis of the triangular fossa through the dissection of 100 adult brains without neurological abnormalities. The brains, preserved in 10% formaldehyde for at least 10 weeks, were dissected in two stages: first, the roof of the third ventricle was exposed to observe the thalamic nuclei and nearby structures, followed by the removal of part of the thalamic nuclei to reveal the triangular fossa. Morphological characteristics and dimensions of the triangular recess were documented, and Heron's formula was used to calculate its communication area with the third ventricle. High-resolution images were captured using a Nikon D7000 camera and processed with Adobe Photoshop CS5 and Capture NX2. Statistical analysis, including Pearson correlation and Paired Samples T-test, was conducted to explore relationships between key variables. This approach provides insights into the anatomical and functional features of the triangular fossa. **RESULTS:** The triangular recess was identified as having a complex morphological organization, consisting of a deep and superficial component. The deep part displays a quadrangular pyramidal configuration, bounded by the fornix and anterior commissure. Key morphometric data, including the ventricular aperture, which averaged 271.43 mm², revealed a strong positive correlation with the posterior wall ($r=+0.697$, $p=0.001$). The superficial component, defined by a vestibular structure, demonstrated statistical consistency across measurements. Significant differences were noted between the areas of the deep section (34.07 mm²) and the ventricular aperture (271.43 mm², $p=0.001$). **CONCLUSION:** The study confirms the presence and intricate morphology of the triangular recess, offering a reliable anatomical model for ventricular endoscopy. These findings open new perspectives for improving neurosurgical approaches and understanding ventricular anatomy in clinical practice.

07. INVESTIGATION OF CRYPTOGENIC STROKE AMONG PATENT FORAMEN OVALE PATIENTS AT SULTAN QABOOS UNIVERSITY HOSPITAL: A CASE-CONTROL STUDYAhmed Al-Farsi¹Fahad Alkindi, MD, FACC, FSCAI²¹College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman.²Sultan Qaboos University Hospital, Muscat, Oman

INTRODUCTION: Cryptogenic stroke, where no clear embolic source is identified, poses a significant challenge in clinical practice. Patent Foramen Ovale (PFO), a small opening between the atriums, is found in cases of Cryptogenic stroke. Many theories have arisen to explain the stroke risk associated with PFO, focusing on larger PFOs as carrying the highest risk. However, this belief may not fully capture the complexities of PFO-related strokes. This study set out to uncover the influence of PFO on stroke risk and how demographic and clinical factors shape these associations. **MATERIALS AND METHODS:** This study analyzed 91 patients with diagnosed PFOs, including 38 individuals with confirmed cryptogenic stroke and 53 controls without stroke. We examined the relationships between stroke occurrence and various factors, such as age, gender, PFO Characteristics, hypertension, and hemoglobin levels. Brain CT scans were employed to identify stroke types and the affected vessels, while treatment modalities' effectiveness in preventing stroke recurrence was also assessed. Statistical analyses, including Chi-square tests, Independent sample T-tests, and McNemar tests, helped us delve into the associations and gauge the strength of each factor's contribution to stroke risk. **RESULTS:** Contrary to traditional expectations, smaller PFOs were significantly associated with an increased risk of stroke, challenging the conventional belief that larger PFOs pose a greater risk. No significant correlations were found between stroke risk and well-established risk factors such as age, gender, hypertension, or hemoglobin levels. CT findings primarily revealed ischemic strokes involving mainly the middle cerebral artery. Importantly, current treatment protocols showed significant success in reducing stroke recurrence, showcasing their critical role in managing PFO-related strokes. **CONCLUSION:** This study challenges the traditional view that larger PFOs carry the greatest stroke risk, revealing that smaller PFOs might pose a greater threat than previously thought. The lack of a significant association between typical risk factors like hypertension and hemoglobin levels suggests that PFO-related strokes may follow a different pathophysiology than other ischemic strokes. These findings underscore the need for rapid diagnosis and proactive management of PFOs to prevent stroke recurrence. Further research is essential to confirm these results and fine-tune treatment strategies, potentially reshaping how we approach cryptogenic strokes in clinical practice.

08. ANALYSIS OF SEVERE COVID-19 CASES IN THE UKRAINIAN POPULATION IN 2020-2022Taisiia Siemieniak¹Anastasiia Vatsenko, MD, PhD²¹Poltava State Medical University,²Poltava State Medical University, department of infectious disease with epidemiology

INTRODUCTION: It has been 4 years since the SARS-Cov-2 virus was discovered in late 2019, but it is still actively spreading around the world and remains relevant. Constant mutations of the coronavirus cause periodic increases in the incidence in different parts of the world, accompanied by an increase in the number of severe cases and hospitalizations in intensive care units (ICU). **MATERIALS AND METHODS:** his retrospective study analyzed data from 552 patients diagnosed with COVID-19 who had severe disease and were admitted to the ICU of the Poltava Regional Clinical Infectious Diseases Hospital, Poltava, Ukraine, from 2020 to 2022. Patient survival rates were analyzed based on the Meyer-Kaplan survival curve, and predictors of lethal outcome were identified. **RESULTS:** In the period from April 2020 to September 2022, out of 552 hospitalized patients with severe disease, 174 (31.5%) were discharged from the hospital, and 378 (68.5%) had lethal outcomes. Among patients who died, the gender distribution was approximately the same: 55.3% women and 44.7% men ($p = 0.390$). The vast majority of the deceased were over 60 years of age - 78.8% ($p = 0.000$). In the group of patients who had a lethal outcome, when assessing the overall Kaplan-Meier survival function, the probability of survival was 99.6% on day 1, 67% on day 10, 42% on day 20 and 21% on day 30 after hospitalisation. By applying the long-rank test, differences in the survival functions were observed in the variables: age over 60 ($p = 0.000$), need for invasive artificial lung ventilation ($p = 0.000$), concomitant cardiovascular disease ($p = 0.000$), nervous system disease ($p = 0.012$), and leukocytosis at hospitalization ($p = 0.001$). **CONCLUSION:** In the period 2020-2022, a high level of lethal outcomes was recorded in hospitalized patients with severe COVID-19, regardless of the SARS-CoV-2 virus variant. The main predictors of probable lethal outcome in patients with severe COVID-19 were age over 60, the need for invasive ventilation, concomitant cardiovascular disease, nervous system disease, and leukocytosis at hospitalization.

09. MEANS FOR PREDICTING MORTALITY IN SEVERE, BACTERIAL SUPRAINFECTED INFLUENZA CASESAlexandra Ripea¹, Asst. Lect. Tudor Fleseriu, Md, PhD¹Prof. Anca-Meda Văsieșu, MD, PhD¹¹University of Medicine, Pharmacy, Science and Technology of Târgu Mureș

INTRODUCTION: Severe influenza cases are frequently aggravated by bacterial superinfections, increasing inflammation and lung damage, resulting in a cumulative risk of acute respiratory distress syndrome (ARDS), sepsis and other life-threatening conditions. An early evaluation of these patients' mortality risk can offer insights for tailored, timely interventions, in order to diminish these risks.

MATERIALS AND METHODS: This study included 74 patients admitted for severe Influenza infections between September 2022 and April 2024 into a County's Hospital Infectious Diseases Clinics. Inclusion criteria were oxygen saturations (SaO₂) <90%, oxygen therapy requirement, the confirmation of Influenza A/B infection via antigenic/ RT-PCR test. We excluded those patients who were lost from follow-up before resolution (extraterritorial transfer/on-demand discharge/SARS-CoV2 coinfection) and those without bacterial superinfections. We aimed to determine the mortality prediction accuracy of various markers, including fibrinogen, C-reactive protein (CRP), neutrophil-to-lymphocyte ratio (NLR), at admission (T1), between day 3 and day 7 (T2) and within the second week of admission (T3) via ROC analysis. **RESULTS:** After applying the inclusion/exclusion criteria, a total of 55 patients remained in the study, of which 10 (18.18%) succumbed to complications. The ROC analysis has demonstrated a very high mortality prediction accuracy for NLR after day 3 (T1 AUC: 0,681, p=0,78; T2 AUC: 0,892, p<0,001; T3 AUC: 0,966, p<0,001), a moderate and late prediction for CRP (T1 AUC: 0,631, p=0,22; T2 AUC: 0,690, p=0,10; T3 AUC: 0,776, p=0,032) but failed to establish a connection between fibrinogen levels (T1 AUC: 0,471, p=0,78; T2 AUC: 0,692, p=0,10; T3 AUC: 0,766, p=0,063) and mortality. **CONCLUSION:** The neutrophil-to-lymphocyte ratio (NLR) proved to be a strong predictor of mortality in severe, bacterial superinfected influenza cases, especially from day 3 onward. C-reactive protein (CRP) showed moderate and late predictive value, while fibrinogen was not a reliable indicator. NLR may be useful for early risk assessment and guiding timely interventions in these high-risk patients.

10. IMAGISTIC EVALUATION OF VENTRICULAR FUNCTIONS FOLLOWING A VIRAL MYOCARDITISBianka Krisztina Benedek¹Prof Imre Benedek, MD, PhD¹¹ University of Medicine, Science and Technology Târgu Mureș

INTRODUCTION: A significant number of patients who have been previously infected with SARS-COV-2 and undergo cardiac magnetic resonance (CMR) examinations, present with viral myocarditis. Although CMR is well-established in detecting viral myocarditis, the specific CMR features linked to concerning alterations in ventricular function among post-COVID patients have not been clearly identified. The objective of this study was to assess the role of myocardial edema (ME) on CMR investigations in predicting the deterioration of ventricular function in patients suffering from viral myocarditis. **MATERIALS AND METHODS:** A total of 55 patients with positive CMR investigations for viral myocarditis post-COVID-19 infection were included in the study. The evaluation of myocardial tissue was conducted using delayed gadolinium enhancement phase-sensitive inversion recovery sequences, with inversion recovery images indicating high signal intensity considered suggestive of edematous changes. Participants were categorized into two groups based on the presence of myocardial edema at the time of CMR evaluation: group 1 (n=18)- patients without ME, and group 2 (n=37h - patients with ME detected by CMR. End-diastolic and end-systolic volume indexes (EDVI and ESVI), ejection fraction (EF), and stroke volume (SV) were measured in all patients. **RESULTS:** Compared to those without My ME, patients with positive signs of ME on CMR imaging were older (42.9 ± 14.8 vs. 36.7 ± 16.6 , $p=0.02$), and the majority were males (59.4% vs. 38.8%). Additionally, EF was substantially lower in patients with ME ($50.9 \pm 14.5\%$ in group 2 vs. $58.4 \pm 10.2\%$ in group 1, $p=0.03$). Moreover, patients belonging to group 2 had a more accentuated dilatation of ventricular cavity, proven by a substantial increase in ventricular volumes. This was the most evident in the case of patients with ESVI (109.8 ± 125.9 vs. 80.1 ± 14.2 , $p=0.5$ for EDVI, and 65.2 ± 109.1 vs. 30.0 ± 11.4 , $p=0.02$ for ESVI). Stroke volume index was notably lower in patients with ME compared to those without (44.2 ± 17.3 in group 1 vs. 47.7 ± 7.5 in group 2, $p=0.03$). **CONCLUSION:** COVID-19 myocarditis present with positive signs of ME on CMR investigations was linked to a decreased trajectory of left ventricular function due its direct correlation with an increased ventricular dilatation and reduced cardiac output.

**Powerpoint Session
REVIEWS****01. FERROPTOSIS-INDUCED PULMONARY FIBROSIS:
MECHANISTIC INSIGHTS AND THERAPEUTIC PROSPECTS**Cristina Trocin¹, Assoc. Prof. Alexandru Corlăteanu, MD, PhD¹¹„Nicolae Testemițanu” State University Of Medicine And Pharmacy, Chișinău

INTRODUCTION: Ferroptosis is an iron-dependent, non-apoptotic cell death characterized by the lethal accumulation of lipid reactive oxygen species. Recent studies suggest that addressing the process of ferroptosis could provide a promising therapeutic approach for fibrotic diseases, including pulmonary fibrosis, a pathological condition marked by the abnormal buildup of extracellular matrix in pulmonary tissues. This review aims to synthesize current knowledge on the mechanistic insights of ferroptosis and its implications in pulmonary fibrosis, alongside identifying innovative potential therapeutic targets of the regulatory mechanisms of this phenomenon. **MATERIALS AND METHODS:** Extensive literature searches were conducted using the PubMed, Medline, ERS Journals and Web of Science bibliographic databases, focusing on articles published between 2012 and 2024. The keywords used were: "ferroptosis", "fibrosis", "lungs", and "therapeutic". Out of the 214 articles reviewed, only 89 were selected for inclusion in the study. **RESULTS:** Iron levels are significantly elevated in lung tissues of individuals diagnosed with idiopathic pulmonary fibrosis (IPF), while human lung fibroblasts exhibit a significant profibrotic response to increased iron concentrations. The dysregulation of the redox state within lung tissue has been extensively documented in IPF. An important factor in the progression of the pathological process is the pronounced reduction in levels of essential antioxidant compounds, including nuclear factor erythroid-2-related factor 2 (Nrf2), glutathione (GSH), and glutathione peroxidase 4 (GPX4). A series of studies underscored the critical role of GPX4 in mediating lipid peroxidation during pulmonary fibrosis, establishing a link between reduced GPX4 expression and enhanced lipid peroxidation in IPF fibroblasts. This lipid peroxidation, resulting from low GPX4 levels, facilitates the progression of IPF through the activation of the transforming growth factor beta (TGF- β) signaling pathway. The interaction between iron overload and GPX4-mediated lipid peroxidation indicates a potential activation of ferroptosis in the pathogenesis of IPF. **CONCLUSION:** Recently, the number of studies that revealed the causal link between ferroptosis and idiopathic pulmonary fibrosis has increased significantly. The researches established the reduction of the antioxidant protection capacity, the amplification of lipid peroxidation and the hyper activation of some signaling pathways in the lungs, which could constitute pathogenic mechanisms of fibrosis, but also potential therapeutic targets.

**02. ARTIFICIAL BLOOD: A SOLUTION FOR BLOOD
TRANSFUSION SHORTAGES**Author: Nicolae-Florin Iftimie¹, Cosmin-Ștefan Velnic¹, Alexandru-Ionuț Sănduleanu¹, Asst. Lect. Anca Lavinia Cianga, MD, PhD^{1,2}¹„Grigore T. Popa” University of Medicine and Pharmacy Iași, ²„Sfânta Maria” Emergency Children's Hospital Iași

INTRODUCTION: The ongoing search for a blood substitute has been a significant focus for over a century, yet no solution has fully replaced donated blood in clinical settings. Hemoglobin-based oxygen carriers (HBOCs) and perfluorocarbon-based products (PFPs) have emerged as potential alternatives. This review examines recent developments in the field, assessing the importance of artificial oxygen carriers in bridging the gap in situations where blood transfusions are not viable due to medical, logistical, or religious reasons. **MATERIALS AND METHODS:** A literature review was conducted based on the PRISMA guidelines, covering studies from 2020 to 2024. Databases such as PubMed and Scopus were searched using keywords including "artificial blood," "hemoglobin-based oxygen carriers," and "perfluorocarbon-based products." Ten articles were selected, including clinical trials focusing on HBOCs and PFPs. The patient population ranged from 18 to 70 years, primarily in trauma and surgical care. These studies were chosen for their relevance in assessing the efficacy and safety of artificial blood products in clinical settings where traditional blood transfusions are unavailable. **RESULTS:** While no HBOCs or PFPs have completely succeeded in replacing human blood, progress has certainly been made in the field. Previous products, including HemAssist, PolyHeme, and Hemospan, were taken off the market due to safety concerns and adverse effects observed during use. On the other hand, Hemopure is still utilized in specific clinical settings, particularly in South Africa and Russia. Its veterinary counterpart, Oxyglofin, is approved for use in animals in both the United States and the European Union. Additionally, new products like Sanguinate are being developed to enhance oxygen delivery in situations such as sickle cell crises and traumatic injuries, offering promising alternatives. **CONCLUSION:** Although there are still significant concerns about the safety and effectiveness of artificial blood substitutes, ongoing research is vital to realizing their full potential. While it is unlikely that these products will fully replace human blood donations, they do provide valuable alternatives for patients who cannot access traditional blood supplies. As research progresses, we can expect to see exciting developments that may expand the clinical uses of these artificial oxygen carriers in the coming years.

03. TUMOR INFILTRATING LYMPHOCYTES' ROLE IN BREAST CANCER TREATMENT

Miruna Elena Stratone¹, Asst. Lect. Elena Iftimi, MD, PhD^{1,2}

¹"Grigore T. Popa" University of Medicine and Pharmacy, ²Department of Immunology, "Grigore T. Popa" University of Medicine and Pharmacy

INTRODUCTION: Tumor infiltrating lymphocytes (TILs) are a subset of lymphocytes located within the tumor microenvironment of solid malignancies. Studies have highlighted the promising therapeutic potential of TIL-based treatments for various carcinomas, opening new strategies in developing a personalized care plan. TIL therapy is a cell-based immunotherapy using the patient's own immune cells, isolated from the tumor microenvironment, to eliminate tumor cells. While conventional treatments for breast cancer (BC) have demonstrated efficacy, the utilization of TIL both as a prognostic biomarker and as a therapeutic option has shown promising results, particularly in challenging subtypes, such as triple-negative breast cancer (TNBC). **MATERIALS AND METHODS:** For this study, we selected the information from PubMed and Google Scholar databases, focusing on the role of TILs in breast cancer treatment. The reviewed literature encompasses studies conducted on patients with breast carcinoma, demonstrating favorable clinical outcomes, and emphasizing the potential of TILs as predictive biomarkers and as an alternative therapeutic approach for the more aggressive BC forms, such as TNBC. **RESULTS:** Analysis of published research indicates that TILs positively influence the clinical outcomes of BC patients. While their impact is less pronounced in ER-positive breast cancer, TILs exhibit prognostic value in HER2-positive and TNBC subtypes, TIL percentages correlating with favorable clinical outcomes. Studies suggested that in patients with TNBC, higher levels of TILs within the local tumor environment were associated with improved survival rates, compared to lower levels. Moreover, it has been reported that every 10% increase of TILs benefits the clinical outcome of TNBC patients. Although the majority of HER2 positive breast cancers display similar levels of immune infiltrate as TNBC, the presence of TILs has not demonstrated similar survival benefits. **CONCLUSION:** The findings support the hypothesis that TILs might play, in the future, a pivotal role in predicting and treating TNBC. Even if TILs show clinical importance as a biomarker for BC, the use of TIL-based immunotherapy, which has shown efficacy in other types of solid tumors, is yet to be studied. There is a critical need for further research in the fields of immunology and oncology to improve the efficiency of personalized therapeutic strategies envisioned by modern medicine.

04. THE OPTIMISTIC FUTURE OF ALZHEIMER'S TREATMENT: EXPLORING MONOCLONAL ANTIBODY THERAPY ADVANCES

Maria-Sarah Boşneagă¹, Maria Dumitriu², Ioana-Flavia Gheorghiu¹, Daniela Constantinescu, MD, PhD¹

¹Grigore T. Popa University of Medicine and Pharmacy of Iaşi, ²Carol Davila University of Medicine and Pharmacy

INTRODUCTION: Alzheimer's disease (AD), the leading cause of dementia, is characterized by the accumulation of beta-amyloid (A β) peptides, triggering neurofibrillary tangles and inducing brain changes known as the amyloid cascade. This cascade leads to neuroinflammation, neuronal damage, and cognitive decline, making β -amyloid a key focus for research and treatment. Therefore, the development of anti-amyloid monoclonal antibodies (mAbs) represents a significant step forward in Alzheimer's treatment, providing the first disease-modifying therapies (DMTs) for neurodegenerative disorders. Clinical studies reveal that mAbs can delay cognitive decline, revealing their promise for treating β -amyloid disease. **MATERIALS AND METHODS:** This review is based on multiple papers published between 2022 and 2024 and selected from PubMed and ScienceDirect using the keywords "monoclonal antibody" and "Alzheimer's disease". The main inclusion criterion required participants to either be receiving treatment with a specific anti-amyloid monoclonal antibody or be eligible for such treatment. **RESULTS:** The first generation of monoclonal antibodies used in Alzheimer's disease treatment, targeted A β monomers but showed little clinical benefit. In contrast, second-generation mAbs focus on oligomeric A β , which represents a key pathogenic factor. Thus, donanemab, gantenerumab, and lecanemab are among the first treatments to slow disease progression. PET and MRI imaging have shown a reduction in amyloid plaques and brain volume changes in patients treated during the early stages of Alzheimer's. **CONCLUSION:** Despite promising results from clinical trials, more well-tolerated treatments are still needed. The limited slowing of Alzheimer's disease progression after anti-A β monoclonal antibodies treatment suggests that additional pathogenic mechanisms must be targeted. In the future, combining these therapies with other approaches could offer more effective remedies for the disease.

05. BREAKING THE CHAIN: PREVENTING MOTHER-TO-CHILD TRANSMISSION OF MPOX

Maria Dumitriu¹, Maria-Sarah Boşneagă³, Cristina-Iulia Mitran, MD, PhD²,

¹„Carol Davila” University of Medicine and Pharmacy of Bucharest, ²Cantacuzino National Institute of Research, ³„Grigore T. Popa” University of Medicine and Pharmacy of Iaşi

INTRODUCTION: The World Health Organization recognizes Mpox (formerly known as Monkeypox) as a viral disease caused by an orthopoxvirus called monkeypox virus. Infections, spread through close contact, can lead to severe rashes, fever and enlarged lymph nodes. The disease can be fatal without proper treatment, especially for certain groups such as children. The virus can be passed on to the fetus during pregnancy or to the newborn by contact during and after birth. **MATERIALS AND METHODS:** This review is based on multiple articles, published between 2022 and 2024, selected from PubMed and ScienceDirect using keywords “pregnancy” and “Mpox treatment”. The main purpose of this evaluation was to determine and analyze the maternal and perinatal outcomes of pregnancies complicated by the Mpox infection. **RESULTS:** Research indicates that clade IIb Mpox can be transmitted vertically from mother to fetus in macaque pregnancies, affecting the placenta and various cell types. This mechanism is similar to clade I Mpox infection in humans. Adverse outcomes of this disease include preterm labor, pregnancy loss, maternal death, mother-to-child Mpox transmission, small-for-gestational age, low birthweight, microcephaly, and congenital anomalies. The CDC (The Centers for Disease Control and Prevention) recommends tecovirimat as the first-line treatment for pregnant women with confirmed Mpox, while cidofovir and brincidofovir are avoided due to teratogenic risks. Two vaccines are available: ACAM2000, contraindicated in pregnancy, and JYNNEOS, which is supported by the FDA (Food and Drug Administration) for use during gestation based on reassuring animal studies. **CONCLUSION:** In light of these findings, it is crucial to prioritize research and public health measures that ensure the safety of females who are pregnant and at risk for Mpox, as outcomes may be worse for them and their fetuses. It is also essential to advance the understanding of effective treatments and preventive strategies.

06. DYSREGULATION OF UBIQUITIN-PROTEASOMAL PATHWAY IN NEURODEGENERATIVE DISEASES: A NARRATIVE REVIEW

Sebastian-Marian Leonte¹, Stefan Lucian Condurache¹, Robert-Alexandru Hapeci¹

Assoc. Prof. Bogdan Alexandru Stoica MD, PhD¹

¹„Grigore T. Popa” University of Medicine and Pharmacy of Iaşi

INTRODUCTION: Ubiquitin plays an essential role in various cellular processes, including protein degradation, signaling, and trafficking. Dysregulation of ubiquitin-mediated pathways has been implicated in a wide range of neurodegenerative diseases. Therefore, ubiquitin poses a multifaceted role in the pathogenesis of these disorders, especially regarding the UPS (Ubiquitin-proteasome system), which plays a crucial role in preventing unwanted protein deposits that are very harmful towards the brain and major risk factors for neurodegenerative disorders. Understanding the molecular mechanisms of UPS is fundamental for developing new treatments that target this system to prevent or slow down these diseases.

MATERIALS AND METHODS: Our systematic review analyzed relevant articles from recent 10 years published on PubMed, ScienceDirect, Elsevier, and The Lancet as a result of research using the following keywords: “ubiquitin,” “ubiquitin-proteasome,” and “neurodegenerative diseases”. **RESULTS:** Most genetic studies have shown that E3 ligase dysfunction is strongly linked with further development of neurodegenerative disease on the pathological basis of amyloid deposits, mitochondrial dysfunction, impaired autophagy and inflammation. One of the most important proteins involved in the evolution of neurodevelopmental disorders are the E3 ligases, enzymes that catalyze the transfer of ubiquitin to target proteins. Dysregulation of E3 ligases can lead to protein aggregation, mitochondrial dysfunction, and ultimately neuronal cell death, pathologically translated as dementia, schizophrenia, etc.

CONCLUSION: Ubiquitin dysregulation, particularly through E3 ligase dysfunction, emerges as a critical factor in the pathogenesis of neurodegenerative diseases. UPS plays a vital role in preventing protein aggregation, a hallmark of these disorders. Understanding the molecular mechanisms underlying E3 ligase dysfunction offers promising avenues for developing targeted therapeutic interventions. By modulating UPS activity or addressing E3 ligase dysregulation, novel strategies could potentially mitigate the progression of neurodegenerative diseases and improve patient outcomes.

07. **EXPLORING DEEP BRAIN STIMULATION FOR OBSESSIVE-COMPULSIVE DISORDER AND TREATMENT-RESISTANT DEPRESSION**

Ioana-Flavia Gheorghiu¹, Co-Author: Cristina-Stefania Iorga¹, Maria-Sarah Boşneagă¹, Eva-Maria Elkan, MD, PhD¹

¹Grigore T. Popa University of Medicine and Pharmacy of Iaşi

INTRODUCTION: Deep Brain Stimulation (DBS) is a neuromodulation technique widely used as a standard treatment for Parkinson's disease, essential tremor, and dystonia. The procedure involves implanting electrodes in specific brain areas, which are connected to a pacemaker-like device that delivers electrical stimulation. Given its success in movement disorders, DBS has been investigated as a treatment for psychiatric conditions, with the most data available for Obsessive-Compulsive Disorder (OCD) and Treatment-Resistant Depression (TRD). **MATERIALS AND METHODS:** A systematic literature search was conducted using data retrieved from the PubMed, MEDLINE, Cochrane Library, and Embase databases. The search focused on studies published between 2020 and 2024, employing the following keywords: "deep brain stimulation", "Obsessive-Compulsive Disorder" and "Treatment-Resistant Depression". **RESULTS:** Clinical outcomes demonstrate that the most effective DBS targets for OCD include the anterior limb of the internal capsule (ALIC) and anteromedial subthalamic nucleus (amSTN), with notable reductions in Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) scores. These targets function as nodes within common neural networks, connected by white matter tracts linking cortical areas involved in decision-making, emotion regulation, and compulsive behaviors. Other targets employed in OCD include ventral capsule/ventral striatum (VC/VS), the nucleus accumbens, inferior thalamic peduncle, bed nucleus of stria terminalis, playing a crucial part in processing motivation, reward and aversion. Similarly, the VC/VS and subcallosal cingulate cortex (SCC) are key targets for TRD, showing significant reductions in Montgomery-Åsberg Depression Rating Scale (MADRS) scores. VC/VS stimulation improves mood and social behavior, while SCC induces alleviation of anxiety, easing the difficulty of breathing or moving. Studies support the viability of DBS as a treatment for OCD even in patients with complex comorbidities, such as depression and anorexia nervosa. **CONCLUSION:** DBS is a promising treatment for psychiatric disorders, applicable to a broader range of patients to whom prior treatments have failed. Future developments, particularly in integrating advanced technologies, may facilitate the identification of personalized targets and improve clinical outcomes for patients, aligning treatment more closely with each clinical phenotype involved in these disorders.

08. **ALUMINUM CHLORIDE TOPICALS: NEW GOLDEN STANDARD FOR AXILLARY HYPERHIDROSIS OR A LEADING CAUSE OF BREAST CANCER?**

Mara-Atena Vlad-Craioveanu-Motomancea¹

¹Carol Davila University of Medicine and Pharmacy Bucharest

INTRODUCTION: Idiopathic hyperhidrosis affects 2.8% of worldwide population, decreasing their quality of life. Injecting botulinum toxin is an invasive, painful, and expensive therapy, making aluminum chloride (AC) topical an alternative option. However, the rising incidence of breast cancer leads to the question of whether AC usage in axillary quadrant is associated with this condition, making this review's aim. **MATERIALS AND METHODS:** Studies from 2007 to 2023 were searched in PubMed and Google Scholar databases, using keywords "aluminum chloride", "hyperhidrosis" and "breast cancer". Inclusion criteria were studies assessing genetic modifications of human breast cancer cells, localization, and concentration of Aluminium in skin tissue via biopsy. Articles with other treatment methods, and overlapping were excluded. Bias risk was not evaluated and PRISMA guidelines were used for data synthesis. **RESULTS:** Sappino et al. (2012) studied MCF-10A cell line (normal human mammary epithelium), exposed for 6-9 weeks to pure diluted AC, in the same concentration as 3 commercially available antiperspirants. MCF-10A cells lost focal contact of inhibition and gained autonomous growth ($p < 0.0001$), indicating increased proliferation stress. Exley et al. (2007) measured aluminum concentration in 17 breast cancer biopsies, discovering higher values in the axilla region 3-192 nmol/g, than in the inner breast region (middle 3-51 nmol/g and medial 3 – 122 nmol/g) ($p = 0.033$). Wen-Tsao Ho et al. (2023) studied aluminum localization in axillary skin of $n = 10$ patients, stating that aluminum didn't pass the axillary apocrine glands to other local tissue. Results were consistent with previous research conducted by Yamashita et al. (2012) on $n = 127$ patients with palmar hyperhidrosis, study which was selected due to its immunofluorescence precise localization of aluminum in skin tissue. Aluminum was seen only on the surface of the stratum corneum and in the amorphous cost that blocks the sweat ducts. **CONCLUSION:** No conclusive evidence suggests that AC is a breast carcinogen, but there are DNA modifications in breast epithelial cells. In vitro results managed to prove the hypothesis, but biopsies led to different conclusions since aluminum localization was too superficial to create any damage. Consequently, more research is needed.

09. CRISPR/CAS SYSTEMS – THE NEXT BREAKTHROUGH IN THE BATTLE AGAINST HIVFelix-Marian Geodoiu¹Cristian-Gabriel Ciobanu, MD, PhD^{1,2}¹"Grigore T. Popa" University of Medicine and Pharmacy of Iași,²Emergency Hospital for Children „St. Maria” Iași

INTRODUCTION: Ever since AIDS emerged as a global issue decades ago, numerous researchers have attempted to find an effective treatment for HIV. Although antiretroviral therapy (ART) effectively reduces the impact of HIV, it does not offer a definitive cure. However, recent years have shown that CRISPR/Cas systems are an effective way to overcome this ongoing challenge. **MATERIALS AND METHODS:** A systematic search was conducted in 3 different databases (Pubmed, Web of Science and Scopus) up to September 2024. Out of 774 initially found studies, 24 were selected for the purpose of this review. The search was performed using specific keywords ("CRISPR", "HIV", "therapy"). We included articles that describe strategies of HIV treatment using CRISPR/Cas systems. **RESULTS:** The results indicate the existence of multiple therapeutic approaches for treating HIV using CRISPR/Cas systems, with techniques such as direct viral gene disruption, host restricting factor induction, host dependency factor disruption and latency reversal. The use of CRISPR/Cas systems in developing these techniques has improved accuracy, simplified processes, reduced adverse effects, and lowered costs. **CONCLUSION:** CRISPR/Cas systems have the potential to significantly contribute to the development of HIV infection therapies. While there is still a considerable distance to traverse before establishing methods that can be used without restrictions on human patients, the studies initiated thus far offer promising indications for the future.

10. REVIEW OF IMMUNE CHECKPOINT INHIBITION IN METASTATIC COLORECTAL CANCER: ADVANCES AND CHALLENGESStefan Lucian Condurache¹, Sebastian-Marian Leonte¹, Robert-Alexandru Hapeci¹Asst. Lect. Elena Iftimi, Md, PhD²¹„Grigore T. Popa” University of Medicine and Pharmacy,²Department of Immunology, „Grigore T. Popa” University of Medicine and Pharmacy

INTRODUCTION: Immune checkpoint inhibition (ICI) is a form of therapy that introduced novel therapeutic opportunities for the management of solid tumors and proved successful in certain types of cancer. This approach targets key proteins on immune cells or tumor cells, thereby modulating the anti-tumor immune response. ICI therapy gained researchers' attention following positive outcomes in melanoma patients. Stage IV metastatic colorectal cancer (mCRC) has narrow curing possibilities and ICI may open a new stable pathway of treatment, with the potential to elicit a robust and sustained anti-tumor response. **MATERIALS AND METHODS:** Data has been collected from PubMed and Scopus databases, using key terms such as "Immune checkpoint inhibition" OR "immune checkpoint inhibitors" OR "PD-1" OR "PD-L1" OR "CTLA-4" AND "colorectal cancer" OR "CRC" OR "rectal cancer" OR "colon cancer" OR "colorectal carcinoma", to determine under which circumstances the therapeutic effect is accomplished. The selected articles focused on underpinning the immune mechanisms which facilitate the treatment in mCRC patients. **RESULTS:** The findings revealed a spectrum of factors that support ICI as a cancer treatment in metastatic colorectal cancer that is mismatch-repair-deficient and microsatellite instability-high (dMMR-MSI-H). However, the prevalence of dMMR-MSI-H in stage IV CRC is relatively low and, in the majority of mCRC cases which were microsatellite instability-low (dMMR-MSI-L), ICI therapy has shown limited clinical benefit. This is attributed to the absence of immunogenic mutations and low levels of neoantigen production of mismatch-repair-proficient/microsatellite-stable tumors, which are crucial for the effectiveness of this type of treatment. Thus, defective DNA mismatch-repair is a key figure in the efficacy of the ICI treatment. Immune cells' affinity for ICI increases based on the number of mutations in DNA bases. **CONCLUSION:** Immune checkpoint inhibitors have a therapeutic potential in certain types of metastatic colorectal cancers. The targeted patients need to be well stratified to obtain a positive response. Further research is required to define the right inclusion and exclusion criteria for therapy and to identify patients who are most likely to benefit from ICI therapy.

11. STROKE REHABILITATION: STRATEGIES FOR RECOVERY, EMPOWERMENT AND REGAINING INDEPENDENCECristina-Ştefania Iorga¹, Ioana-Flavia Gheorghiu¹¹Grigore T. Popa University of Medicine and Pharmacy of Iaşi

INTRODUCTION: The primary aim of stroke rehabilitation is to facilitate the recovery of patients from the physical and neurological impairments caused by stroke. Ischemic strokes, caused by reduced cerebral blood flow, and hemorrhagic strokes, caused by intracranial bleeding, result in brain damage that impairs essential functions such as movement, speech, cognition, and emotional regulation. Rehabilitation efforts focus on helping patients regain lost abilities or adapt to new functional limitations, with an increasing emphasis on leveraging neuroplasticity to enhance recovery outcomes.

MATERIALS AND METHODS: A systematic review of the literature was conducted using materials sourced from the PubMed, MDPI databases focusing on the key terms "stroke", "rehabilitation" and "neurorehabilitation."

RESULTS: Several brain stimulation techniques, including vagus nerve stimulation (VNS) and non-invasive methods like transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (TDCS), show promise in improving motor recovery post-stroke. Preliminary evidence suggests that VNS, when paired with task-specific upper limb therapy, significantly enhances motor recovery in chronic stroke patients. TDCS, applied via scalp electrodes, has been demonstrated to modulate interhemispheric inhibition, potentially improving upper limb function. Meta-analytic data suggest a dose-response relationship, though variability remains across studies. Ongoing research, such as the TRANSPORT2 trial, is investigating optimal dosage and rehabilitation combinations. Additionally, TDCS has shown potential in treating aphasia, particularly through anodal stimulation over the left inferior frontal gyrus to enhance speech production. TMS studies suggest benefits for upper extremity recovery, with low-frequency stimulation over the unaffected hemisphere and high-frequency stimulation over the affected hemisphere, particularly in the subacute phase. However, the efficacy of TMS in chronic-phase recovery is less consistent.

CONCLUSION: Stroke often results in significant motor and cognitive deficits that severely impact functional independence and quality of life. Neurorehabilitation, particularly with a focus on restoring upper limb function and improving speech, is crucial for enhancing recovery. Recent advances in brain stimulation techniques offer promising adjuncts to conventional rehabilitation by promoting neuroplasticity and potentially improving functional outcomes. Further research is needed to refine stimulation protocols and better understand the mechanisms by which these interventions enhance recovery.

12. MIND AND GUT: NEW PERSPECTIVE INTO GHRELIN FUNCTIONSMaria Botezatu¹, Anastasia Melania Mihalache¹Lect. Elena Petrescu Dănilă¹¹„Grigore T. Popa” University of Medicine and Pharmacy of Iaşi

INTRODUCTION: Ghrelin (Ghr) is a 28-amino-acid gastrointestinal peptide first discovered in 1999 in the rodent stomach. As a critical orexigenic hormone, its well-established role is regulating metabolism via binding to the growth hormone secretagogue receptor (GHSR)1a. Recent studies shed light on new-found functions, such as stress response, anxiety, motivation, and mood. **MATERIALS AND METHODS:** Systemic searches on PubMed, World of Science, and Elsevier databases were performed for all publications using the terms: „ghrelin”, „depression”, and „anxiety”. This review is based on 16 articles published in the last 10 years that studied the ongoing debate about the role of ghrelin in mood disorders such as depression and anxiety and possible alternative anti-depressant therapy. **RESULTS:** Ghrelin is a multifunctional hormone highly based on circumstances. While the majority of research papers support higher ghrelin levels with anxiolytic and anti-depressive behaviours, there have been studies linking it to major depressive disorder (MDD), suicide attempts, post-menopausal depression, post-partum depression. In-depth research on ghrelin signaling and anti-depressant treatment could provide insight into treatment resistance mechanism, identifying antidepressant medication with higher response rate with a given metabolic state. Furthermore, correlations between plasmatic acyl-ghrelin levels report variable associations towards anxiolytic- and anti-depressive behaviours in both human and animal studies. In rats and mice repeated tail pinch, water avoidance stress, daily restraint, chronic unpredictable stress, and chronic social defeat stress all increased plasma ghrelin, leading to increased inflammation. From another perspective, sex-divergent effects and estrogen-mediated ghrelin also play a crucial role in the signaling pathway, as females have higher ghrelin plasma levels than males. **CONCLUSION:** The review highlights the complex and context-dependent role of ghrelin in mood disorders, particularly depression and anxiety. More studies are needed to investigate the conflicting findings regarding the anxiolytic- versus anxiogenic behaviour of ghrelin. Understanding ghrelin's signaling pathways could be key to developing more effective antidepressant therapies, especially in treatment-resistant cases, where metabolic factors may influence drug efficacy.

13. TREATMENT FOR PAEDIATRIC ACUTE LYMPHOBLASTIC LEUKAEMIA: A REVIEW ON BLINATUMOMAB

Gabriel-Erich Ganea¹, Daria-Ioana Vreme¹, Bogdan-Tudor Bugeac¹

Asst. Lect. Anca Lavinia Cianga, MD^{1,2}

¹University of Medicine and Pharmacy "Grigore T. Popa" Iași, ²"Sfânta Maria" Emergency Children's Hospital Iași

INTRODUCTION: Standard chemotherapy (SC) in paediatric Acute Lymphoblastic Leukaemia (ALL) is generally associated with high mortality, high rates of neurotoxicity and other severe toxicities. A bispecific T-cell engager antibody called Blinatumomab offers a promising alternative to SC in children by binding to both CD19 protein expressed on the surface of ALL cells and CD3 protein specific to the surface of T-cells, allowing the latter to lyse ALL cells.

MATERIALS AND METHODS: This review uses 7 articles published on PubMed from 2014 to 2023, all of which compare SC and Blinatumomab treatment, with the aim of testing the efficacy and safety of this new therapy in children. Patients with central nervous system pathologies (e.g. epilepsy, seizures, stroke, severe brain injuries, paresis, cerebellar disease) were excluded. **RESULTS:** One of the main studies included 108 young patients (28 days to 18 years old, from 13 different countries) with high-risk first-relapse B-ALL who were split into 2 groups of 54 participants each, randomised to receive either 1 cycle of Blinatumomab or 1 cycle of SC. The purpose of this phase 3 trial was event-free survival (events being death, relapse, failure to achieve complete remission). 16 patients (29.6%) in the SC group and 8 patients (14.8%) in the Blinatumomab group died, but there were no fatal adverse effects in either group. The incidence of serious adverse events was 24.1% in the Blinatumomab group compared to 43.1% in the SC group. **CONCLUSION**

In 2014, the FDA granted accelerated approval of Blinatumomab. While further research is needed to evaluate long-term outcomes and optimise dosing strategies, Blinatumomab therapy shows promise in paediatric ALL, particularly in relapsing patients. The benefits outweigh the risks, with side effects generally being manageable,

14. SGLT2 INHIBITORS IN HEART FAILURE MANAGEMENT- A SYSTEMATIC REVIEW

Mihnea Cozac¹, Alexia-Gabriela Stratan¹, Mara-Georgiana Uliliuc¹

Asst. Lect. Alexandr Ceasovschih MD, PhD¹

¹"Grigore T. Popa" University of Medicine and Pharmacy Iași,

²"Sf. Spiridon" Emergency Clinical County Hospital Iași, "Grigore T. Popa" University of Medicine and Pharmacy Iași

INTRODUCTION: Heart failure (HF) represents a medical condition defined by the myocard's inability to efficiently pump blood and is one of the leading causes of morbidity and mortality worldwide. Originally intended as a glucose-lowering drug, sodium-glucose cotransporter-2 inhibitors (SGLT2i), have proven to be a remarkable contributor in reducing the risk of hospitalization for HF. The aim of this systematic review is to assess the viability of SGLT2i administration in HF occurrence rate diminishment. **MATERIALS AND METHODS:** 919 publications were identified focusing on HF, SGLT2i and hospitalization. The final analysis is based on 13 Pubmed eligible articles published between 2021-2024. Inclusion criteria comprised patients diagnosed with heart failure with reduced ejection fraction (HFrEF), type-2 diabetes and chronic kidney disease, while exclusion criteria consisted of hypertensive patients, those presenting type-1 diabetes or low glomerular filtration rate. All selected patients followed a randomized and double-blinded treatment scheme (1:1 ratio) with placebo or Dapagliflozin/Empagliflozin 10 mg daily, additionally to their usual heart failure medication. Periodical assessment was conducted as to analyze outcomes and functional capacity related to heart failure, intensification of diuretic therapy, vital signs, heart failure routine biomarkers, and adverse events. **RESULTS:** Results proved that compared to the placebo, SGLT2i demonstrated a significantly reduced risk of cardiovascular death by 38%, all-cause mortality by 32%, and heart failure-related hospitalizations by 35%. However, there was no significant difference in myocardial infarction or stroke incidence. The SGLT2 inhibitors have exhibited important cardioprotective effects through reduction of intracellular sodium levels, which prevents calcium overload caused by upregulated sodium-hydrogen exchanger (NHE1) and consequent exploitation of the Na⁺/Ca²⁺ exchanger. SGLT2i have been shown to reduce intracellular sodium concentrations by inhibition of NHE1, Na⁺/Ca²⁺ balance restoration and cardiomyocyte death prevention. Another theory supports that, on a molecular level, exposure to gliflozin treatment mimics nutrient and oxygen deprivation, with subsequent autophagy stimulation, maintaining cellular homeostasis through different degradative pathways. **CONCLUSION:** Overall, recent research on the SGLT2 inhibitors shows promising results for being a safe and effective addition to the standard treatment of heart failure, with great potential for increasing cardiovascular protection, reducing hospitalization and improving overall patient outcome.

15. **DUAL SYMPTOM MANAGEMENT IN FIBROMYALGIA: HOW TMS REDUCES BOTH PAIN AND DEPRESSION**

Daniel Buznean¹, Bianca-Cristina Chiperi¹

Snr. Lect. Cristina Pomirleanu, MD, PhD¹

¹Grigore T. Popa University of Medicine and Pharmacy of Iași

INTRODUCTION: Fibromyalgia and depression are debilitating conditions that significantly affect patients' quality of life, leading to chronic pain and mood disturbances. Existing treatments often have limited efficacy, necessitating innovative approaches. Transcranial Magnetic Stimulation (TMS) is a promising non-pharmacological intervention that targets the left dorsolateral prefrontal cortex (DLPFC) and the primary motor cortex (M1) to alleviate both pain and depression. **MATERIALS AND METHODS:** This review analyzed 10 articles from PubMed, published between 2018 and 2024, all utilizing randomized controlled trials. The studies varied in terms of TMS protocol (DLPFC vs. M1), stimulation frequency (1 Hz – 10 Hz), intensity, and the number of sessions administered. Studies used validated scales such as the Hamilton Depression Rating Scale (HDRS) for depression and patient-reported outcomes for pain assessment. Inclusion criteria required patients to have a minimum duration of fibromyalgia symptoms of 6 months and a diagnosis of moderate to severe depression. Some studies employed skin conductance as an objective physiological marker to assess stress and anxiety, providing a more comprehensive evaluation of TMS efficacy. **RESULTS:** Studies on TMS application to DLPFC and M1 indicate distinct patterns of efficacy in treating depression and pain. TMS applied to the DLPFC demonstrated significant improvements in depressive symptoms, with reductions in HDRS scores of up to 40%, as patients reported enhanced mood and emotional regulation. Conversely, TMS applied to M1 was associated with reductions in pain scores, with some studies showing pain reductions of up to 35% and increased levels of endogenous opioid activity. One study highlighted that TMS applied to M1 was more effective in reducing musculoskeletal pain, while DLPFC stimulation provided superior outcomes for mood regulation. **CONCLUSION:** TMS applied to different brain regions offers a targeted approach for treating fibromyalgia and depression. The findings suggest that DLPFC stimulation is more effective for ameliorating depressive symptoms, while M1 stimulation yields better outcomes for pain management. These underline the potential of combining TMS protocols to achieve comprehensive symptom relief in patients suffering from both fibromyalgia and depression. Future research should focus on standardizing TMS intervention protocols, exploring the effects of combining DLPFC and M1 stimulation.

16. **IS THERE MAGIC IN THE MAGEC SYSTEM? MAGNETICALLY CONTROLLED GROWING RODS FOR EARLY-ONSET SCOLIOSIS**

Isabella-Maria Mindea¹

¹Carol Davila University of Medicine and Pharmacy

INTRODUCTION: Managing early-onset scoliosis (EOS) has traditionally relied on growing rods, which require frequent invasive surgeries. The introduction of the MAGEC system—magnetically controlled growing rods—offers a non-invasive alternative. This review aims to evaluate the clinical outcomes of the MAGEC system versus traditional growing rods (TGR), highlighting its potential to revolutionize EOS treatment by reducing surgical frequency and enhancing effectiveness. **MATERIALS AND METHODS:** An extensive literature review was conducted using the PubMed database to identify relevant studies on the MAGEC system. Keywords included: magnetically controlled growing rods, early-onset scoliosis, pediatric orthopedics, and spinal surgery. Inclusion criteria were based on factors such as frequency of surgical interventions, spinal curvature correction, and T1-S1 lengthening. Studies that did not meet these criteria or had significant overlap were excluded. Bias risk was not assessed, and PRISMA guidelines were followed for data extraction. **RESULTS:** Out of the initial 12 studies, 6 met the inclusion criteria, dating from 2014 and involving 330 patients. Samadov et al. (2023) revealed that the MAGEC system significantly reduced the frequency of surgical interventions (99 in TGR vs. 25 in MAGEC, $p < 0.001$). Akbarnia et al. (2014) demonstrated comparable spinal curvature correction (MD: -1.85 degrees, $p < 0.05$) but a difference in T1-S1 lengthening. MAGEC patients experienced an average increase of 8.1 mm/year in T1-S1 during the lengthening period, compared with 9.7 mm/year for TGR patients. Additionally, there was a mean increase in T1-T12 of 1.5 mm/year for MAGEC patients versus 2.3 mm/year for TGR patients. **CONCLUSION:** The MAGEC system represents a significant advancement in treating early-onset scoliosis, offering fewer surgical interventions and shorter hospital stays compared to traditional growing rods. Despite concerns about long-term durability, clinical outcomes suggest the MAGEC system provides an effective, less invasive option for managing EOS. Continued research and long-term follow-up are necessary to fully evaluate the system's long-term efficacy and safety.

17. ROOTING OUT ADVANCED OVARIAN CANCER: CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY APPROACH

Alexia Gabriela Stratan¹, Mara-Georgiana Uliliuc¹, Mihnea Cozac¹
Asst. Lect. Vlad Porumb, MD, PhD^{1,2}

¹Grigore T. Popa" University of Medicine and Pharmacy Iasi,

²"Dr. Iacob Cziha" Military Hospital Iași

INTRODUCTION: Ovarian cancer (OC) remains the leading cause of gynaecological cancer death worldwide, due to its high recurrence rate and marked propensity for direct peritoneal spread at diagnosis (75%). Cytoreductive Surgery (CRS) combined with Hyperthermic Intraperitoneal Chemotherapy (HIPEC) constitutes a notoriety-gaining therapeutical approach which targets remaining microscopic intraperitoneal residual tumor after radical resection. The aim of this review is to assess the feasibility of this treatment strategy in decreasing OC recurrence, prolonging survival and improving quality of life in oncologic patients. **MATERIALS AND METHODS:** This review is based on 11 PubMed articles (9 Original Studies, 2 Meta-Analyses) published between 2018-2022, totalling 1128 patients. Inclusion criteria comprised patients aged ≥ 18 diagnosed with primary/recurrent epithelial ovarian, tubal and peritoneal carcinoma staged $\geq$ IIIB, and without general anesthesia contraindications for major surgery, while those who underwent previous surgery due to peritoneal metastases, recurrence, borderline tumor or presenting other histological subtypes were excluded. After preoperative evaluation of peritoneal dissemination using abdominal and chest CT scan and CRS for maximum tumor excision, closed HIPEC infusion was performed using platinum-based drugs at the temperature of 41.5 °C administered through four drains, followed by thorough abdomen re-exploration after HIPEC completion. **RESULTS:** Auspicious results were proven regarding overall survival (OS), disease-free survival (DFS) and progression-free survival, as well as post-operative morbidity when comparing HIPEC and CRS association to standard treatment alone. Post-treatment analysis for 1-5 years OS displays that HIPEC benefits are statistically significant from the second year, with a reduction of 36% in the risk of death which gradually shortened to 23% at the fifth year. As DFS is concerned, a striking 42% reduction in the risk of recurrence is observed directly from the first year of follow-up, thus advocating for a drastic diminishment at a short time window. With regard to any-grade adverse effects, increased prothrombin time and acute kidney injury were prevalent after HIPEC performance. However, the beneficial effect on recurrent OC is still under further discussion. **CONCLUSION:** Overall, current evidence upon the use of HIPEC and CRS highlights promising results in epithelial OC therapeutical approach, with optimistic prospects for managing cancer survivorship and its dramatic medical and psychosocial consequences.

18. TOOTHFAIRY MAY RESTORE YOUR SIGHT? OSTEO-ODONTO-KERATOPROSTHESIS A REVIEW OF AN UNUSUAL PROCEDURE

Bogdan-Tudor Bugeac¹, Matei-George Ilie¹, Gabriel-Erich Ganea¹

¹Grigore T. Popa University of Medicine and Pharmacy, Iași, Romania

INTRODUCTION: Osteo-odonto-keratoprosthesis (OOKP) is a unique surgical procedure designed to restore vision in patients suffering from severe corneal blindness, particularly when other means, such as keratoplasty are contraindicated. The procedure involves extracting a mono-radicular tooth and its surrounding alveolar bone and using a diamond-tipped drill to shape the tooth and bone complex to its desired measurements. An optical cylinder is introduced and this osteo-odonto-acrylic-lamina (OOAL) is planted in the affected eye. It has shown significant success in patients with autoimmune disorders like Stevens-Johnson syndrome (SJS) or ocular trauma. The main objective of this review is to assess the latest data regarding the efficacy, patient outcomes, and long-term challenges associated with OOKP. **MATERIALS AND METHODS:** This review is based on articles published on ScienceDirect between 2012-2023. Ten articles are used to assess several elements of this procedure for instance the intricacy of the two stages in which the operation takes place and the possible complications. The main criteria for inclusion were adult patients with bilateral corneal blindness from end-stage ocular diseases such as SJS, severe dry eye states, cicatricial trachoma, or ocular damage caused by chemical burns or dog bites. Exclusions such as patients with phthisis bulbi or eyes that can't perceive light with detached retinas were used. **RESULTS:** From the total of 139 identified articles, 10 were analysed and all found that OOKP has an 85% improved visual acuity after 5 years post-operation. Despite its effectiveness, OOKP is not without complications. Glaucoma related complications developed in 19% of patients. Selection bias may be possible because of the lack of comorbidities in patients presented which may influence the outcomes. **CONCLUSION:** In patients where the usual keratoplasty can't be used due to multiple problems notably autoimmune diseases, trauma or recurrent immunological rejection OOKP has shown great potential but is limited by its sheer complexity. More research is needed to refine the procedure and reduce complication rates.

19. **BREAST IMPLANT ASSOCIATED ANAPLASTIC LARGE CELL LYMPHOMA - REALITY OR FICTION? A SYSTEMATIC REVIEW**

Radu Alexandru Ilieș¹, Maria Căinap¹, Magda Melisa Micu¹
Maximilian Muntean PhD^{1,2}, Laura Urian MD, PhD^{1,2}, Ioan Constantin Pop, MD^{1,2}

¹"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

²"Prof dr. Ion Chiricuță" Institute of Oncology, Cluj-Napoca

INTRODUCTION: Recently, a controversial topic in plastic surgery is the use of textured implants and their potential linkage to breast implant-associated anaplastic large cell lymphoma (BIA-ALCL), a rare T-cell malignancy positive for CD30, arising in the capsule located around the implant. Still, it is uncertain how strong the association between them is, the estimated incidence varying between 1:86,029 and 1:2,207. The aim of this review is to assess the safety of each breast implant type for developing BIA-ALCL. **MATERIALS AND METHODS:** Articles between 2020 and 2024 from PubMed database were selected, using the keyword "BIA-ALCL". Inclusion criteria consisted of: articles to be written in English and free full text available, respectively to contain data related to implant types, epidemiology of BIA-ALCL and risk factors. Single clinical cases were excluded from the analysis. The estimated risk and the real incidence of the disease are used to compare the two groups - smooth and textured implants. PRISMA guidelines were used for data synthesis. **RESULTS:** Out of 153 articles, only 17 were eligible for further analysis, representing surveys, case series, respectively reviews. 13 of them found higher incidences of the disease in the groups with textured implants. Dabic et al estimated a 10 year risk of 1 in 250 women in the textured implant group. Cordeiro et al reported a risk between 1/30,000 and 1/2,832 in women with textured implants. Nelson et al emphasized gradual increase in incidence of the disease in the textured implant group, using Kaplan-Meier curves. The remaining 4 articles stated that there does not exist any evidence to prove such correspondence, as data is not sufficient on this topic. **CONCLUSION:** Overall, the relation between textured implants and BIA-ALCL remains uncertain, although most of the articles are in favor of textured implants to represent a risk factor for BIA-ALCL development. The level of evidence is low and more research is needed, considering not only the lack of studies performed on patients with this disease, but also the reduced number of cases that were recorded so far. Moreover, the calculated incidences are variable and do not allow to draw conclusions.

20. **ACHILLES TENDON LENGTHENING: PERCUTANEOUS VERSUS Z-LENGTHENING SURGICAL APPROACH**

Erika Maria Cristea¹

¹Carol Davila University of Medicine and Pharmacy

INTRODUCTION: Achilles tendon lengthening is performed in numerous pathologies, which supports the need for a thorough surgery plan before proceeding. Two of the most famous surgical techniques on this matter are Percutaneous tendon lengthening, in which three cuts are made onto the tendon, and Z-lengthening, a more invasive approach, as the tendon is cut in a „Z” shape and sutured back. This review aims to compare those and assess the outcomes in different etiologies. **MATERIALS AND METHODS:** This analysis draws on 14 studies indexed in PubMed and Google Scholar, from 2006 to the present. The employed keywords were: Achilles tendon lengthening, Percutaneous, Z-lengthening. Inclusion criteria encompassed clinical trials discussing the results of Percutaneous or Z-lengthening surgery. The ones discussing Achilles tendon repair, non-surgical approaches, or animal trials were excluded. Data was synthesized through a method of abstraction. PRISMA guidelines were applied, although bias risk was not assessed. **RESULTS:** In patients with Cerebral Palsy, Frederick R. et al. (2006) affirm that there was no significant difference in outcome between the two surgeries, on a medium-term follow-up. For Clubfoot patients, several trials showed the benefits of Percutaneous lengthening as part of the Ponsetti method. Luisella P. et al. (2024) studied tendons undergoing Percutaneous or Z-lengthening, which resulted in no statistically notable variance in tendon thickness. In the case of diabetes mellitus forefoot or midfoot plantar ulceration, Colen L. et al. (2013) conducted a study in which 92% of the patients underwent a Percutaneous lengthening, and the rest had a Z-lengthening. It resulted in a forefoot unloading and reduced risk of ulcer recurrence. **CONCLUSION:** After a negative Silfverskiöld test, the surgeon can proceed with any of those two surgeries. The choice stands in considering the cause of tendon shortening and the lower leg bone anatomy. The popular approach for Achilles tendon lengthening in different etiologies is Percutaneous, due to a lower rate of adhesion, pain, scarring, or infection. However, in cases of a plantarflexion deformity above 20 degrees, the Z-lengthening becomes the better approach.

**Powerpoint Session
CASE REPORTS****01. TESTICULAR SERTOLI CELL TUMOR – A CASE REPORT**Ștefan Chiru¹, Ecaterina Barnea¹Prof. Irina-Draga Cărunțu, MD, PhD¹¹„Grigore T. Popa” University of Medicine and Pharmacy, Iași

BACKGROUND: Sertoli cell tumor (SCT) is a rare sex cord stromal neoplasm counting for approximately 1% of testicular tumors. Microscopic appearance supports classification into one of the three described subtypes: classic, large-cell calcifying and sclerosing – generally with benign behavior. **CASE PRESENTATION:** We present a case of a 33-year-old male admitted to Urology Department for swelling and pain in left testis. Clinical examination revealed a small compact mass, hypoechogenic and hypervascular at ultrasound. Markers for testicular cancer (β -human chorionic gonadotropin, α -fetoprotein, lactic dehydrogenase and alkaline phosphates) were normal. No secondary lesions were identified by computed tomography scan. The patient underwent orchiectomy. Gross examination identified a 1.5 cm nodular, well circumscribed, homogenous white lesion, in the upper pole of the left testis. Histopathology revealed a non-encapsulated tumor proliferation composed of irregular nests or trabeculae arranged in a reduced fibro-hyaline stroma. Tumor cells were polygonal, with eosinophilic or vacuolated cytoplasm, ovoid nuclei, some with indentations, finely dispersed chromatin, and isolated micronucleoli. Three mitoses per 10 high-power fields were highlighted. The neighboring seminiferous tubules preserved normal architecture, with marked spermatogenesis. No angioinvasion or necrosis were found. Immunohistochemistry showed the following profile: positivity for beta-catenin, vimentin and synaptophysin, negativity for inhibin, calretinin, SALL4, CD30, CD117, chromogranin, CK7, CKAE1/AE3; Ki67 index was 10-15%. **CONCLUSION:** Correlation of clinical, biological and morphological features with immunohistochemical profile sustains diagnosis of SCT, considered a benign entity. Criteria for malignancy (size over 5 cm, marked cytological atypia, necrosis, high mitotic activity, lymphovascular invasion, extratesticular extension) were lacking. Testicular SCT is less commonly studied than its ovarian counterpart. Few cases of SCT have been reported in literature, focusing mainly on sclerosing subtype. Therefore, this case report could be considered a “lesson to be learnt” in the training of a student interested in histopathology.

02. RECURRENT ANGIOMATOID FIBROUS HISTIOCYTOMA WITH EWSR1 GENE INVOLVEMENT IN A YOUNG WOMANKristóf-Gergő Nagy¹Assoc. Prof. Horváth Emőke, MD, PhD^{2,3}¹University of Medicine, Pharmacy, Sciences and Technology “George Emil Palade”, Târgu Mureș, ²Department of Pathology, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mureș, ³Department of Pathology and Experimental Cancer Research, Semmelweis University, Budapest

BACKGROUND: Angiomatoid fibrous histiocytoma (AFH) is a rare soft tissue tumor affecting mainly the subcutaneous tissue of the extremities and trunk, usually in children, adolescents and young adults without sex predilection. It is currently considered to be a tumor of intermediate malignant potential, with a very low risk of metastasis and a recurrence rate of less than 15%. Treatment usually consists of surgical extirpation. FISH analysis for EWSR1 gene rearrangement may be helpful in diagnosis. **CASE PRESENTATION:** We present the case of a 20-year-old woman who developed a solid soft tissue tumor mass in her left leg measuring 20x12x6cm. Surgery was performed in May 2024. On gross examination it had irregular margins and a greyish-brown cut surface with hemorrhagic foci. She also had surgery in the same area in 2016 with a pathological diagnosis of AFH with tumor-free resection margins. This diagnosis was not supported by FISH studies for EWSR1 gene rearrangement at that time. Histopathology and molecular study: The recurrent tumor was consistent with the primary one, both histologically and in terms of tumor cell phenotype, consisting of blood-filled pseudoangiomatous spaces, syncytial sheets, CD99-, EMA- and CD68-positive epithelioid and spindle cells, with a low Ki67 proliferation index (15%) and lymphoplasmacytic infiltrate in the periphery. FISH analysis confirmed the involvement of the EWSR1 gene. The metastatic potential of this recurrent tumor with positive resection margins was highlighted in the pathology report. Close follow-up of the patient and regular imaging studies were recommended. **CONCLUSION:** Based on the results of the two histopathological studies performed by FISH, we diagnosed recurrent AFH, a relatively rare feature in this type of soft tissue sarcoma. This aspect also underlines the peculiarity of this case, as the metastatic ability of the tumor does not depend on the histological features, but on the recurrence propensity. Recurrent AFH may mimic a vascular malformation or an organized hematoma, and therefore the detection of the EWSR1 rearrangement is key to the diagnosis in these cases. In the presence of recurrence, adjuvant radiotherapy and/or chemotherapy should also be considered.

03. STEINERT'S MYOTONIC DYSTROPHY: PROGRESSIVE MUSCLE WEAKNESS IN A YOUNG ADULT

Alexandru Călin¹, Maria-Bianca Andrei¹, Cristiana-Teodora Isac¹
Alin Ciubotaru, Md, PhD¹

¹University of Medicine and Pharmacy

BACKGROUND: Myotonic dystrophy type 1 (Steinert's disease) is an autosomal dominant neuromuscular genetic disorder with multisystem involvement and phenotypic variability. The disease is characterized by myotonia, progressive muscle weakness, and cardiac and respiratory complications, significantly impacting life expectancy.

CASE PRESENTATION: A 28 year old male patient from a rural area, with no known personal medical history, presented with a 2-year history of progressive muscle weakness, predominantly in the distal limbs, associated with difficulty walking and climbing stairs. He reported bilateral muscle stiffness in his hands, with difficulty releasing objects after grasping, which improved with repeated muscle contractions and relaxations. Family history was significant: the patient's father had cataracts at age 35, and his paternal uncle had gait disturbances and died suddenly at age 42. Clinical examination revealed flaccid tetraparesis, symmetric muscle atrophy, spontaneous and provoked myotonia, and preserved deep tendon reflexes. Electromyography confirmed myotonic discharges, and brain MRI showed white matter changes. Ophthalmologic evaluation revealed bilateral early-stage cataracts. Based on clinical and paraclinical findings, the diagnosis was myotonic dystrophy type 1 (Steinert's disease), associated with cataracts and mild intellectual disability. **CONCLUSION:** Steinert's myotonic dystrophy is a progressive multisystem genetic disorder with no curative treatment. Patient management focuses on genetic counseling, symptomatic treatment, and prevention of cardiopulmonary complications. The prognosis is guarded, with a high risk of sudden death and respiratory failure. The disease's progression leads to disability and reduced life expectancy.

04. A DOUBLE-EDGED STREAM: BILATERAL VESICoureTERAL REFLUX AND URETER DUPLICATION IN A PEDIATRIC CASE- A BATTLE AGAINST RECURRENT INFECTIONS AND CHRONIC KIDNEY DECLINE

Alexia Urtoi¹, Elisabeta Sasu¹

Iuliana-Magdalena Stârcea^{1,2}

¹"Grigore T. Popa" University of Medicine and Pharmacy Iasi,

²St. Mary" Emergency Clinical Hospital For Children Iasi

BACKGROUND: Vesicoureteral reflux (VUR) is the result of abnormalities of the ureterovesical junction. Reflux is prevented by the presence of an adequate submucosal ureter within the bladder, which acts as a passive one-way flap valve. Primary vesicoureteral reflux is due to a short submucosal tunnel and enlarged ureteral orifice. It can be either asymptomatic, or associated with urinary tract infections (UTIs), possibly resulting in renal scars with progressive chronic kidney disease in the context of reflux nephropathy. The causes are unknown, however it has a strong genetic component, being more frequently seen in boys than girls (29% vs 14%), having a tendency of developing higher grades of VUR during infancy and it may also occur in congenital abnormalities, such as ureter duplication. **CASE PRESENTATION:** A 2-year-old boy is admitted for nephrologic evaluation, having a history of two documented UTIs at five months and one year of age, caused by multi-resistant *Escherichia coli*. We also note recurrent febrile episodes over the past four months, associated with upper respiratory tract infections. Clinically he presents pale mucous membranes, congenital phimosis with fibrotic ring and a speech development delay. Left renal hypodysplasia with compensatory hypertrophy of the right kidney was noted on ultrasound, with poor corticomedullary differentiation. A retrograde voiding ureterocystography was performed, which confirms the suspicion of vesicoureteral reflux (VUR) grade 2 on the left side. Antibioprophylaxis with Epitrim was recommended. Subsequent scintigraphy with DTPA and DMSA confirms a hypoplastic left kidney, retaining minimal function at 7.8%. Considering the recurrent UTIs and installation of hypertension, left nephrectomy was performed, during which a urethral duplication is discovered. The histopathological examination results indicate glomerular sclerosis and chronic inflammation in the context of a small, scarred kidney. Over a span of 1 year, the child presented with newer episodes of UTIs, therefore another voiding ureterocystography was performed, showing VUR grade II on the right single kidney. Subsequently, another scintigraphy is performed, which shows a net scarred right kidney with cortical interruption at the superior pole and the middle-external third. Currently, he is still under observation, and the results of a new cystoscopy are awaited. **CONCLUSION:** Despite therapeutic interventions, including antibiotic prophylaxis, the risk of renal deterioration remains high in our patient, especially given the newly established reflux on the right kidney. This case underscores the critical need for ongoing monitoring and management in children with complex urinary anomalies to mitigate long-term renal impairment. A multidisciplinary approach involving nephrology and urology specialists is essential to optimize outcomes and consider potential surgical options, such as corrective procedures or transplantation, in the event of progressive renal failure. The importance of patient education and regular follow-ups cannot be overstated in such multifaceted cases.

05. TAKOTSUBO SYNDROME: HOW DOES EMOTIONAL DISTRESS TRANSLATE INTO PHYSICAL CARDIAC DYSFUNCTION?

Bianca-Cristina Chiperi¹, Teaching Assistant Alexandru-Dan Costache MD, PhD¹, Daniel Buznean¹
Florin Mitu MD, PhD²

¹Grigore T. Popa University of Medicine and Pharmacy of Iași,

²Faculty of Medicine University of Novi Sad

BACKGROUND: Takotsubo syndrome, commonly referred to as "broken heart syndrome," is an acute reversible cardiomyopathy triggered by a surge of catecholamines, typically following a significant psycho-emotional stress. Clinically, it mimics acute coronary syndrome, presenting with chest pain and ST-segment elevation, but without arterial obstruction. Although complications such as arrhythmias may arise, with accurate diagnosis and timely therapeutic interventions, most patients experience full recovery within 3 to 4 weeks, indicating a favorable prognosis. **CASE PRESENTATION:** A 67-year-old female patient was admitted in the emergency department with severe chest pain, triggered by significant psycho-emotional stress. Her medical history included third-degree hypertension and recurrent gastrointestinal issues. Upon admission, she was hypotensive (91/56 mmHg). The electrocardiographic (ECG) examination revealed ST-segment elevation in leads V2 through V6, raising concern for acute coronary syndrome. Laboratory tests showed increased cardiac biomarker values, with troponin levels at 36 ng/L and creatine kinase-MB at 58 U/L. The cardiac ultrasound revealed apical ballooning with akinesia, a non-dilated left ventricle, septal hypertrophy, an ejection fraction of 40% and a mild mitral regurgitation. To rule out coronary artery disease, angiography was performed, which showed no obstructive lesions but revealed a muscular bridge with 75% systolic compression on the left anterior descending artery. The absence of significant obstructions confirmed the diagnosis of Takotsubo syndrome. Following the angiography, the patient developed cardiogenic shock, with a systolic blood pressure of 50 mmHg. Immediate treatment included fluid resuscitation and inotropic support with Dobutamine and Norepinephrine. At discharge, she was advised to undergo cardiovascular rehabilitation. The treatment during this time proved effective in supporting her recovery. One month later, follow-up echocardiography revealed a global longitudinal strain of 15.4%, indicating mild systolic dysfunction at the left ventricular apex, while the left ventricular ejection fraction remained normal, reflecting adequate overall heart function. **CONCLUSION:** This case highlights the intricate connection between emotional stress and cardiac health. Early recognition and prompt management of Takotsubo syndrome are essential to preventing life-threatening complications like cardiogenic shock and ensuring a swift, full recovery.

06. NAVIGATING THE CHALLENGES OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS ADMINISTRATION IN CARDIAC PATIENT UNDER ANTICOAGULANT THERAPY

Ivona Elena Satcău¹, Andra Ioana Pelin¹

Assoc.Prof. Victorița Șorodoc MD, PhD^{1,2}

¹"Grigore T. Popa" University of Medicine and Pharmacy of Iași,

²"St. Spiridon" Emergency County Hospital Iași

BACKGROUND: Direct oral anticoagulants (DOACs) are increasingly used for anticoagulation therapy due to their favorable safety profile and lower risk of bleeding compared to traditional anticoagulants. However, the concomitant use of non-steroidal anti-inflammatory drugs (NSAIDs) can lead to rare complications, such as NSAID-induced enteritis, which may exacerbate bleeding risks, particularly in vulnerable populations. **CASE PRESENTATION:** A 70-year-old patient was admitted to the emergency department presenting with marked asthenia, dizziness, significant lumbar pain, generalized abdominal discomfort and dark semi-solid stools, with symptom onset 72 hours prior. The patient had been self-medicating with non-steroidal anti-inflammatory drugs (NSAIDs) for lumbar pain relief over the preceding two weeks. Medical history included permanent atrial fibrillation and NYHA class II chronic heart failure, managed with direct oral anticoagulant (Rivaroxaban) and other medications. Physical examination revealed an altered general state, obesity, pallor and diffuse abdominal tenderness. Laboratory findings indicated severe anemia (hemoglobin 9.8 g/dL), leukocytosis, and positive occult blood tests. Within 48 hours of admission, hemoglobin levels declined to 7.7 g/dL. Upper gastrointestinal endoscopy demonstrated multiple non-bleeding petechiae in the gastric mucosa, while video capsule endoscopy identified four superficial erosions in the proximal small intestine, suggesting NSAID-induced enteritis. A computed tomography scan showed no evidence of active gastrointestinal bleeding and colonoscopy ruled out significant mucosal lesions. Therapeutic management focused on correcting anemia and optimizing cardiac function. The pharmacological regimen included Carvedilol for heart rate control, Ramipril for heart failure management and Furosemide for fluid overload. A proton pump inhibitor was prescribed for gastroprotection due to the chronic use of NSAIDs. Following a further drop in hemoglobin, the patient received a blood transfusion. One week post-discharge, hypochromic microcytic anemia was identified and treated with iron supplements and anticoagulation therapy with Apixaban was cautiously reinstituted after stabilization. Subsequent follow-up indicated favorable evolution, with normalization of hemoglobin levels and overall improvement in health status. **CONCLUSION:** This case underscores the rare incidence of NSAID-induced enteritis in a patient on DOACs, highlighting the necessity for vigilant monitoring and management in elderly patients with multiple comorbidities, particularly when co-administering NSAIDs and anticoagulants.

07. THE EARLY BIRD CATCHES THE WORM - A COMPLICATED CASE OF CROHN'S DISEASE

Mara-Lorena Imbrea¹, Ionela- Bianca Nemțan-Nișoiu¹, Irina Iancu²

Ștefania Juncu¹

¹"Grigore T. Popa" University of Medicine and Pharmacy,

"Carol Davila" University of Medicine and Pharmacy

BACKGROUND: Crohn's disease is a chronic relapsing inflammatory bowel disease causing inflammation anywhere in the digestive tract. Being a life-long disease, it often leads to complications such as strictures, perianal fistulas, entero-enteric fistulas and appendicular plastrons. Patients at risk of unfavorable evolution are smokers, those with ileal evolving, perianal disease and those with stricturing or penetrating disease. **CASE PRESENTATION:** We present the case of an 18-year old male, current smoker, recently diagnosed with an inflammatory phenotype of ileo-colonic Crohn's disease, on Budesonide treatment. He was admitted to the Gastroenterology Department of "St. Spiridon" County Clinical Emergency Hospital Iasi, a tertiary referral center, for intense abdominal pain in the right iliac fossa. Laboratory analysis showed thrombocytosis, iron deficiency anemia and inflammatory syndrome. On physical examination, the patient was malnourished, the abdomen was tense, presenting pain both spontaneously and on superficial palpation of the right iliac region. Imaging evaluation (abdominal and pelvic computed tomography) showed ileitis and an abscess in the right iliac region for which he was transferred to the Surgery Department. The patient underwent a diagnostic laparoscopy that showed a pelvic inflammatory block and therefore ileostomy and drainage have been performed, followed by antibiotic treatment with Ciprofloxacin. Soon after that, the antibiotic was replaced by Metronidazole and Azatioprine with a favorable subsequent evolution. On the gastroenterology reevaluation, the treatment was changed into biologic therapy represented by Ustekinumab, with a promising evolution so far. **CONCLUSION:** This case dares to indicate that Crohn's patients who present multiple risk factors for an unfavorable outcome at the onset of the disease still manage to show good progression of the condition if they are met with proper surgical management and advanced biological therapy. This is yet another strong argument in favor of early surgical interventions in inflammatory bowel syndromes as they seem to be able to modify the natural history of the disease.

08. APPROACHES FOR HANDLING AORTIC VALVE REPLACEMENT COMPLICATIONS

Miruna Harter-Radu¹, Ioana Adumitresei¹, Alexandru-Ionuț Sănduleanu¹

Florin Mitu^{1,2}, Asst. Lect. Alexandru-Dan Costache, MD, PhD^{1,2},

¹Grigore T. Popa University of Medicine and Pharmacy of Iași,

²Clinical Rehabilitation Hospital, Iași

BACKGROUND: Bicuspid aortic valve (BAV) is one of the most common congenital cardiovascular abnormalities, predisposing patients to developing aortic valve disease or even infective endocarditis. The Bentall procedure is an efficacious surgical intervention in severe cases. Nonetheless, the patient might face life-threatening post-operative complications. Therefore, maintaining INR values above 2.5 is essential, as is establishing chronic oral anticoagulation, indispensable for the long-term prevention of cardioembolic events. **CASE PRESENTATION:** We are presenting the case of a 29-year-old male patient diagnosed with BAV, accompanied by severe aortic regurgitation and an ascending aortic aneurysm. In 2018, he underwent a successful Bentall procedure. Afterwards, a vitamin K inhibitor (Acenocumarol) was prescribed for oral anticoagulant therapy, with the recommendation to maintain INR values above 2.5. Post-surgery, he developed a complete atrio-ventricular block (AVB) necessitating the implantation of a DDD type pacemaker, along with paroxysmal atrial flutter episodes for which Amiodarone therapy was commenced, while maintaining the anticoagulant regimen. In September 2020, despite following an optimal oral anticoagulant treatment schedule, the patient suffered a middle cerebral artery ischemic stroke, in the setting of subtherapeutic INR values. The patient admitted to having followed a diet rich in green leafy vegetables with high contents of vitamin K, which antagonized the anti-vitamin K anticoagulant. In 2021, following recurrent paroxysmal episodes of facial spasm diagnosed as Jacksonian seizures, Rivotril (Clonazepam) was prescribed. Consequently, due to the preservation of sinus rhythm and the absence of additional atrial flutter episodes observed during subsequent 24-hour Holter ECG monitoring, the Amiodarone treatment was stopped. In order to achieve the target range of 3.0–3.5, the patient was advised to have periodic INR measurements twice a month. **CONCLUSION:** The INR lability of some patients necessitates regular monitoring and dose adjustments of Acenocumarol. Anti-vitamin K medications have a number of interactions, including those with diets based on green leafed vegetables. As previously shown, ischemic strokes and other cardioembolic events are more likely to occur when INR levels are below therapeutic values.

09. EYES ON HEMORRHAGIC SHOCK IN A PEDIATRIC PATIENT WITH DUODENAL ULCERElisa-Octavia Velicu¹, Andrei-Stelian Uşurelu¹, Diana-Andreea Uşurelu^{1,2}Viorela Gabriela Niţescu^{1,2}¹Carol Davila University of Medicine and Pharmacy of Bucharest,²Clinical Emergency Hospital for Children „Grigore Alexandrescu”

BACKGROUND: Upper gastrointestinal hemorrhage, defined as blood loss from a gastrointestinal source proximal to the ligament of Treitz, is a life-threatening condition, classified into two main categories: variceal and non-variceal bleeding. Non-variceal UGIH, which includes bleeding from duodenal ulcers, is more common and typically results from mucosal damage due to *Helicobacter pylori* infection or NSAID use. **CASE PRESENTATION:** We report the case of a 15-year-old boy transferred to our clinic from another hospital with the following diagnoses: upper gastrointestinal hemorrhage (UGIH), severe post-hemorrhagic anemia, and acute dehydration syndrome. Two days prior to admission, he experienced “coffee ground” emesis, abdominal pain, dizziness, and melena. He was evaluated at the local clinic, where he received intravenous fluids, metoclopramide, and trimebutine, but his condition worsened, necessitating transfer for further intervention. Upon admission, the patient exhibited a weakened general state and severe pallor, with vital signs indicating tachycardia (HR = 125/min) and hypotension (BP = 102/61 mmHg). Abdominal examination revealed tenderness, with a significant amount of “coffee ground” fluid collected via nasogastric tube. Investigations included blood work-up (showing severe anemia: Hb = 4.6 g/dL), radiographic imaging, which ruled out pulmonary complications, and abdominal ultrasound, showing normal organ structure, but significant meteorism. A multidisciplinary team (pediatrics, general surgery, radiology, and intensive care) evaluated the patient, who underwent an urgent endoscopy, revealing the source of bleeding from a duodenal ulcer approximately 0.5 cm in size. Notably, the histopathological sample confirmed the presence of *Helicobacter pylori*, with duodenal bulb mucosa showing a regenerative aspect with granulation tissue. This finding was significant, given the patient’s age and the rapid development of severe anemia and gastrointestinal bleeding. The patient received red blood cell transfusions, intravenous fluids, and proton pump inhibitors. Initial treatment also included antibiotics targeting *H. pylori* (amoxicillin/clavulanate and metronidazole) with a favorable outcome, and he was discharged after 12 days. **CONCLUSION:** This case highlights the importance of prompt recognition and a multidisciplinary approach to UGIH in adolescents. The atypical presentation of a bleeding duodenal ulcer in a young patient with significant anemia underscores the necessity for careful evaluation and timely intervention to prevent severe outcomes in the pediatric population.

10. ESCHERICHIA COLI MENINGOENCEPHALITIS IN NEWBORNS: A PREDICTABLE DIAGNOSIS OR MEDICAL CHALLENGE?Mara-Georgiana Uliliuc¹, Alexia-Gabriela Stratan², Mihnea Cozac²Gabriela Păduraru¹¹“Grigore T. Popa” University of Medicine and Pharmacy

BACKGROUND: It is vastly known that one of the most frequent gram-negative organisms responsible for causing meningitis in premature newborns is *Escherichia coli* (E.coli), as follows: the treatment scheme is prone to work its efficacy. But what happens when the infection relapses too soon and in a full-term newborn, after being supposedly correctly treated? Notwithstanding with its reputation as a harmless intestinal inhabitant, this organism can also be a highly versatile pathogen, constantly finding new paths of contamination, possibly causing life-threatening infections, thus highlighting its unpredictability and significance. **CASE PRESENTATION:** The current study reports the case of a 30-day-old female patient presenting with a recurring *E. coli* infection, after a correctly administered antibiotic treatment. The first signs of the infection were postnatal, the patient being contaminated transvaginally during childbirth. The source of contamination was the mother, who had previously suffered from a urinary tract infection with *E.coli* in the third trimester of pregnancy. During the first admission, the patient presented with postnatal *E.coli* sepsis and was treated with the proper scheme of antibiotics, thus resulting in an optimal healing. Despite the apparent recovery, 6 days after the discharge, the patient presented with tonic-clonic seizures to the emergency unit, where a CT scan was performed, revealing a tetraventricular hydrocephalus. The clinical examination on admission showed an altered mental status, a Glasgow score of 8, the patient’s opisthotonos position, dyspnea, polypnea and pale mucous membranes. Neurological examination revealed generalised muscle hypotonia, gasping and periods of gaze-fixed apnea and right hemicorporal myoclonus lasting approximately one minute. Laboratory tests, along with the imagistic investigations, confirmed the diagnosis of *E. coli* meningoencephalitis, anemic syndrome, acute dehydration syndrome and transitory hypoglycaemia. The patient was treated with empirical antibiotics, antifungal, anticoagulant and anticonvulsant medication and oxygen therapy. The patient’s evolution was favourable and she responded well to treatment. **CONCLUSION:** In defiance of its seemingly frequent prevalence, the *Escherichia Coli* infection continues to be a topic of research into neonatal care, as proper treatment may not always prevent a subsequent relapse, hence emphasising the crucial aspect of close post-infection follow-up in order to avoid further complications.

11. EXPLORING THE COMPLEXITIES OF DUAL MALIGNANCIES: BRONCHOPULMONARY NEOPLASM AND MELANOMAIuliana Vrăjitoru¹, Catrinel-Ana Codău¹, Flavia Coman¹Lect. Constantin Volovăț¹¹"Grigore T. Popa" University of Medicine and Pharmacy Iasi, Romania

BACKGROUND: It is well established that the risk for a new malignancy is higher in patients who have already survived one or more cancers than in the general population. The increasing incidence of concurrent malignancies, particularly lung cancer and melanoma, presents significant challenges in oncology. These cancers share common risk factors, such as smoking and UV exposure, complicating both diagnosis and treatment. Understanding their interplay is crucial for effective management. **CASE PRESENTATION:** We present the case of a 67-year-old male with a medical history of type II diabetes and hypertension, who was initially diagnosed with bronchopulmonary neoplasm in 2021. Imaging studies revealed a spiculated mass in the upper-posterior segment of the left lung, alongside the presence of an EGFR exon 19 mutation. The tumor exhibited infiltration into adjacent lung tissue and pleura, resulting in the development of multiple miliary nodules and osteolytic lesions. The patient underwent atypical resection of the lingula followed by chemotherapy combined with Osimertinib therapy. During routine follow-up examinations, in March 2024, the patient presented with an indistinct, non-orientable, intensely hypoechoic mass in the left axilla measuring 10.8 x 6.5 x 2.5 cm, which was diagnosed as malignant melanoma. Multiple adjacent nodular formations were observed, some merging, which required elective surgical intervention. The excision revealed substantial infiltration, preventing complete oncologic resection. A second surgical procedure in May 2024 for the axillary tumor demonstrated extensive subcutaneous and nodal involvement, making the complete surgical removal unfeasible. Subsequently, in July 2024, the patient underwent an intervention in the plastic surgery clinic involving the posterior thorax. The procedure involved the excision of the previous scar and the tumor's removal within oncologically safe margins, followed by the creation of a rotational parascapular flap to address the resulting skin defect, along with meticulous dissection and wide lymphadenectomy as a single procedure. The patient has since continued chemotherapy treatment and attends regular follow-up appointments. **CONCLUSION:** This case highlights the complexity of managing concurrent malignancies and underscores the importance of early diagnosis and tailored treatment approaches. Ultimately, the goal is to improve patient care and outcomes in cancers with overlapping risk factors.

12. FROM BLINDNESS TO RECOVERY: A CASE OF SYPHILITIC PLACOID CHORIORETINITISKarina Matei¹, Tudor Mihai Moldovan¹, Dr. Elena Șoitu²Solenne Louison²¹"Grigore T. Popa" University of Medicine and Pharmacy Iași,²Centre Hospitalier Alpes Léman, Contamine-sur-Arve, France

BACKGROUND: Ocular syphilis is a rare but serious manifestation of systemic syphilis that can result in significant vision loss if not promptly diagnosed and treated. The estimated prevalence of ocular manifestations among patients infected with syphilis is approximately 0.65%. It can present in various forms, with syphilitic placoid chorioretinitis being one of the most aggressive. Complications such as vasculitis and papillitis further compromise visual outcomes, making early detection critical. This case report highlights the diagnostic and therapeutic challenges in managing syphilitic chorioretinitis in a young adult. **CASE PRESENTATION:** A 27-year-old male presented with a sudden decrease in visual acuity in the right eye, limited to perceiving hand motions, accompanied by reports of a central scotoma, photophobia, and blurred peripheral vision. His medical history included recreational drug use and unprotected sexual encounters, which are significant risk factors for syphilis. Optical Coherence Tomography (OCT) showed disruption of the ellipsoid zone, along with a perifoveal placoid lesion characteristic of syphilitic retinitis. Fluorescein angiography (FA) confirmed active vasculitis and papillitis, while Indocyanine Green (ICG) angiography demonstrated multifocal choroiditis. Serological testing confirmed a diagnosis of ocular neurosyphilis. The patient was treated with intravenous ceftriaxone (2g daily) for 10 days. Follow-up examinations showed significant recovery, with OCT revealing restoration of the ellipsoid zone and regression of the placoid lesion. Visual acuity improved to 5/10 in the right eye, and angiographic findings confirmed the resolution of vasculitis and papillitis. **CONCLUSION:** This case underscores the importance of early diagnosis and aggressive treatment of ocular syphilis to prevent permanent visual loss. Multimodal imaging, including OCT and angiography, played a crucial role in monitoring disease progression and treatment response. Although ocular syphilis is very rare, the rising global incidence of syphilis makes it increasingly important for clinicians to consider its ocular presentations. Multidisciplinary management, including infectious disease consultation and long-term serological monitoring, is vital for ensuring complete disease resolution and preventing recurrence.

13. A GENETIC DISEASE HIDDEN BEHIND LIMITED MANIFESTATIONSAlexandru Costin Matei¹, Ion Marcoci¹Scientific Coordinator: Lavinia Caba^{1,2}¹Grigore T. Popa University of Medicine and Pharmacy, Iasi,²Department of Genetic Explorations, "Sf. Spiridon" County Clinical Emergency Hospital Iasi

BACKGROUND: Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome represents a genetic disorder (with a normal karyotype – 46,XX), which affects the female reproductive system with a frequency of 1 in 4500 newborns. It is characterized by the absence/hypoplasia of the uterus, fallopian tubes and the vagina; meanwhile the ovaries are normally functioning. The external genitalia are normal. Often, the only noticeable symptom is the primary amenorrhea. Just the involvement of the reproductive system classifies the disease in type I, but if are present abnormalities in other parts of the body too, there is a type II syndrome. The genetic causes of MRKH syndrome remain elusive. **CASE PRESENTATION:** 19 years old patient presented to the genetics medical service because of the primary amenorrhea. The hereditary antecedents reveal the death of the paternal grandmother at the age of 50 due to uterine cancer. The antecedents of the patient consist of an operated polydactyly at the right hand and ectopic kidneys diagnosed at age of 14, facts which suggest a genetic disorder. At the clinical examination, it is only observed a short stature (149 cm). Paraclinical, hormonal analyzes were normal, and the karyotype 46,XX without structural chromosomal abnormalities. Imaging investigations showed pathological aspects. Thus, in the MRI scan were discovered: bilateral ectopic kidneys, the absence of the uterus and fallopian tubes, the hypoplasia of the vagina and ectopic ovaries showing follicular cysts. The ultrasound showed normal sized kidneys, without direct images of calculi, but located in the iliac fossa. Therefore, through the disorders at the level of the reproductive system associated with the renal anomalies, the patient is diagnosed with MRKH type II syndrome. It is recommended chromosomal microarray analysis, endocrinological follow-up, psychological counseling, gynecological consult and a surgical treatment for the vaginal hypoplasia. **CONCLUSION:** This case represents a genetic disorder, whose diagnosis can stay hidden because of its limited manifestations. However, the diagnostic is important to know in order to prevent possible complications and to inform the patient about infertility issues.

14. COVID-19: A TRIGGER FOR TAKAYASU ARTERITISDinu Ciornohuz¹, Matei-Alexandru Gasner¹, Marina Cioran¹Adriana Ciornohuz-Munteanu, MD²¹University of Medicine and Pharmacy "Grigore T. Popa" Iasi²"RKMed Center"

BACKGROUND: Takayasu Arteritis (TA) is a chronic, idiopathic vasculitis affecting the aorta and its main branches, with an incidence of 1.2-2.6 cases per million per year in Western populations, primarily affecting young females. The inflammatory process of the vessel walls can eventually lead to stenosis, occlusion, and aneurysm formation. While the etiological factors are not fully understood, an autoimmune basis combined with genetic and environmental influences has been suggested. **CASE PRESENTATION:** This case report describes a 30-year-old female who suffered a mild form of COVID-19 in January 2022. After recovery, the patient gradually developed fatigue and anterior cervical pain, accompanied by elevated biological inflammatory markers (CRP = 20 times above normal values). Over the next three months, multiple serological, biological, and imaging investigations were conducted, including abdominal, thoracic, and head CT scans, which excluded thyroiditis, infections, and malignancy. After several failed attempts at antibiotic therapy, treatment with glucocorticoids was initiated, leading to prompt resolution of symptoms and a decrease in CRP levels. However, reducing the prednisone dose below 10 mg/day resulted in a return of the inflammatory syndrome. In June 2022, repeat head and thoracic CT scans revealed thickening of the parietal walls of the thoracic aorta, subclavian arteries, and common carotids, suggesting the possibility of vasculitis. An Angio-MRI was performed, confirming the diagnosis of Takayasu Arteritis and identifying the anterior cervical pain as carotidynia. Treatment with Tocilizumab was initiated, resulting in full clinical and biological remission, allowing for safe withdrawal from glucocorticoids. **CONCLUSION:** In conclusion, SARS-CoV-2 infection may act as a trigger for rare autoimmune disorders such as Takayasu Arteritis, providing further insight into the long-term effects of COVID-19.

15. BEYOND THE THYROID - UNCOVERING RARE OVERLAP OF CELIAC DISEASE AND AUTOIMMUNE THYROIDITISIoana Adumitresei¹, Miruna Olguța Ciobanu¹, Miruna Harter-Radu¹Ioana Armașu MD, PhD¹¹Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania

BACKGROUND: Autoimmune thyroiditis (AIT) may be associated with several other autoimmune conditions such as pernicious anemia or vitiligo. However, the association with celiac disease (CD) is less well-documented. In the absence of typical clinical symptoms, the co-occurrence of CD and AIT can be overlooked, as demonstrated by our presented case. **CASE PRESENTATION:** We describe the case of a 64-year-old female patient who presented with three recent episodes of persistent diarrhea and weight loss, and negative bacteriological and imaging investigations, including gastric endoscopy with antral biopsy, colonoscopy, and abdominal CT. Due to her history of hypothyroidism and severe dyselektrolytemia, she was referred to the Endocrinology Department. Upon admission, the patient exhibited asthenia, hypoanabolic syndrome (BMI of 17.5 kg/m²), and inferior limb edema. Biological data confirmed autoimmune thyroiditis with hypothyroidism (TSH=27 μUI/ml, fT4=0.7 ng/dl, ATPO >1000 UI/ml, and ATg >3000 UI/ml), inflammatory syndrome, severe vitamin D deficiency (<3 ng/ml), and severe metabolic disturbances (hypoalbuminemia, hypokalemia, hyponatremia, hypocalcemia, and acidosis). Markers for digestive neoplasia and neuroendocrine tumors were negative. Additional findings revealed osteoporosis and deep vein thrombosis with decreased tolerance to coumarin anticoagulants (INR 7.32) which imposed heparin therapy. CD was suspected, sustained by positive antigliadin antibodies, however, the patient refused duodenal biopsy. Substitutive treatment with levothyroxine, vitamin D supplementation, and a gluten-free diet were started, which led to rapid and persistent improvement of the general status and biological data. **CONCLUSION:** Undiagnosed CD in patients with AIT can determine severe metabolic disturbances due to the vicious circle of malabsorption. Low LT4 absorption imposes attentive substitution dosage. Although current guidelines do not recommend routine screening for CD in AIT patients, the presented case highlights the importance of considering CD in patient populations with metabolic disturbances, which may be paucisymptomatic and/or with late manifestation. Early identification and management, even in the absence of classical CD symptoms, are critical for preventing complications.

16. URINARY LITHIASIS AND OBESITY: MONITORING LITHIASIC PATIENTS WITH OBESITYAna Alexia Tănăsă¹, Mihaela Nikolic^{1,2}Prof. Dr. Cătălin Pricop^{1,2}¹„Grigore T. Popa” University of Medicine and Pharmacy Iași, ²Dr. C. I. Parhon” Clinical Hospital, Iasi, Romania

BACKGROUND: Obesity, a condition defined by an excess of body fat, affects over 1 billion people globally, posing a significant health problem. One of the complications associated with obesity is urinary lithiasis, which affects approximately 115 million people worldwide. Obesity increases the risk of lithiasis due to raised levels of calcium oxalate and uric acid, common stone-forming substances. Furthermore, obesity complicates diagnostic procedures, reduces the success rate of treatment and increases the chances of having more episodes of urinary lithiasis. **CASE PRESENTATION:** At the “Dr. C.I. Parhon” Clinical Hospital in Iasi, Romania, the Program for Evaluating and Monitoring Lithiasic Patients with Obesity (PELO) was initiated to observe and treat these interconnected issues. This program targeted patients who had experienced an episode of urinary lithiasis within the past three years. Alongside personalized diets designed by a dietitian considering each patient's specific stone composition, the program included regular monitoring. Patients kept track of their meals, water intake, and weight, providing information like blood pressure and urinary pH. We have invited 732 patients to enter this program, 241 of whom agreed to meet with a dietitian. The rest of 491 patients have been given a brochure with general information about lithiasis and obesity. Out of the 241 patients, 157 have abandoned the program for different reasons within the first few weeks, out of the rest of 84 patients, 67 have finished the whole 3-month regimen. 35 patients that finished the program came back for a follow-up after 2 years and not only were they at a normal weight, but they also hadn't experienced another lithiasic episode. **CONCLUSION:** The PELO program demonstrated that sustained monitoring and individualized diet can significantly reduce the chances of urinary lithiasis relapse in obese patients. Patients who actively engaged in the program showed improvements in their overall health, weight management, and lithiasis prevention. The results suggest that the success relies on patient commitment and cooperation, with those that finished the program experiencing fewer lithiasis episodes and improved quality of life. Overall, the program offers a promising approach for managing lithiasis in obese patients.

17. COMPLEX MYOCARDIAL REVASCULARIZATION: A VARIANT OF THE "Y"-GRAFT TECHNIQUEAdrian-Emil Gavriluț¹, Alexandra Rusu¹, Alexandru-Sebastian Stoica¹Lucian Stoica, MD, PhD²¹"Grigore T. Popa" University of Medicine and Pharmacy Iași,²Institute for Cardiovascular Diseases "Prof. Dr. George I. M. Georgescu", Department of Cardiovascular Surgery, Iași, Romania

BACKGROUND: Ischemic cardiomyopathy (ICM) refers to a loss of the heart's pump function due to myocardial damage brought upon by decreased oxygen supply. Coronary artery disease (CAD) is the most common cause of ICM. In patients with complex multivessel CAD, when stenoses exceed 75%, coronary artery bypass graft (CABG) surgery is the gold-standard treatment. Arterial conduits are preferred when feasible, given their superior long-term patency rates. However, venous conduits, particularly the great saphenous vein (GSV), remain important alternatives in elderly patients when arterial grafts are unavailable or insufficient. **CASE PRESENTATION:** We present the case of a seventy-four-year-old female patient, known with stage three hypertension and chronic ICM, who had previously suffered an acute myocardial infarction. The patient requested an extensive cardiovascular evaluation, presenting with chest pain and low-effort dyspnea. Coronary angiography objectified significant lesions: 70-80% stenosis of the left anterior descending artery (LAD), 80% stenosis of the circumflex artery (Cx) and occlusion of the posterior descending artery (PDA). Conduits were difficult to obtain, as both GSVs were varicose and the radial arteries presented significant lesions, with the Allen test yielding inconclusive results. A small segment of the right GSV could be harvested and was utilized alongside the internal mammary arteries to perform an on-pump triple CABG. The right internal mammary artery was harvested and anastomosed end-to-side to the skeletonized left internal mammary artery to form a "Y"-graft. The left branch of the "Y" was grafted onto the LAD and the right onto the Cx. The GSV conduit was anastomosed proximally to the right branch of the "Y" and distally to the PDA. The result was a modified version of a "π"-graft. The patient had an uneventful recovery and was discharged with dietary recommendations and a prescription for beta-blockers, loop diuretics and antiplatelet medication. **CONCLUSION:** The selection of conduits in CABG surgery is a crucial aspect that significantly impacts patient outcomes. While venous conduits have lower patency compared to arterial grafts, hybrid conduit techniques, such as the application of "Y"- or "π"-grafts utilizing bilateral internal mammary arteries and the GSV, offer innovative solutions for complex clinical cases.

18. ACUTE MANAGEMENT OF AORTOESOPHAGEAL FISTULA: THORACIC ENDOVASCULAR AORTIC REPAIR AND ESOPHAGEAL STENTINGAlexandru-Sebastian Stoica¹, Adrian-Emil Gavriluț¹, Alexandra Rusu¹Prof. Cristinel-Ionel Stan, MD, PhD¹¹"Grigore T. Popa" University of Medicine and Pharmacy Iași

BACKGROUND: An aorto-esophageal fistula (AEF) is an abnormal connection between the esophagus and the descending thoracic aorta. It can be primary, when caused by an aortic aneurysm, and secondary, as a result of esophageal malignancies, foreign bodies or postoperative complications. AEF is a rare cause of upper gastrointestinal hemorrhage, often deadly; according to current literature 75% of patients that undergo surgical treatment die, and left untreated mortality is 100%. Most patients present with Chiari's triad, characterized by midthoracic pain, a sentinel episode of hematemesis and exsanguination after a symptom-free interval that can range from hours to months. Diagnosis is usually made by upper gastrointestinal endoscopy or computed tomography, but it can prove difficult during the asymptomatic stage or when confused for other benign causes, such as Mallory-Weiss tear, if the patient improves after a period of hematemesis. **CASE PRESENTATION:** We present the case of a sixty-three-year-old patient known with stage three hypertension, type two diabetes and a descending aortic aneurysm. The patient was transferred from the emergency department with massive hematemesis associated with an AEF. Routine lab tests showed severe anemia with a hemoglobin of 6g/dl, but no signs of infection. Computed tomography angiography (CTA) revealed an aneurysm 25mm distal from the origin of the left subclavian artery, measuring 26/27/43mm. It compressed the esophagus in the middle third and bleeding was visible. Thoracic endovascular aortic repair with a 32mm endoprosthesis was performed to exclude the aneurysm and stop the gastrointestinal hemorrhage. An esophageal stent was implanted to further stabilize the lesion and to lower the risk of mediastinitis. A control CTA done after three months revealed periesophageal fibrosis, but no signs of an AEF. An endoscopy was also performed and objectified a large area of fibrous tissue at the level of the lesion, but the esophageal lumen was permeable. **CONCLUSION:** AEFs are uncommon causes of gastrointestinal hemorrhage and diagnosis can be elusive. Patients deteriorate rapidly, especially in the advanced stages. Immediate surgical intervention is crucial for preventing exsanguination. Open surgery carries high risks of developing other complications due to malperfusion and blood loss. In eligible patients the endovascular approach should be preferred.

19. UTERINE TORSION AT TERM – AN UNPREDICTABLE AND PERILOUS EVENT

Maria Pîrcălabu¹

Prof. Ștefania Tudorache, MD, PhD²

¹Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca

²University of Medicine and Pharmacy of Craiova, Emergency County Hospital Craiova

BACKGROUND: Uterine torsion is defined as the abnormal rotation of the uterus exceeding 45° around its longitudinal axis. The rare condition is often associated with multiple uterine fibroids. Most women diagnosed with fibroids will have normal pregnancies, but a higher obstetrical risk was reported, the worst complication being placental abruption. **CASE PRESENTATION:** We present a 31-year-old woman's evolution during her first pregnancy. At routine preconceptional ultrasound (US) scan, the presence of several relatively small, subserous and intramural fibroids, was noted. She was favorable counseled about a future pregnancy outcome. The late first-trimester prenatal screening tests for chromosomal abnormalities were consistent with a low-risk pregnancy. All prenatal US scans showed normal fetal anatomy and growth, and a substantial gradual increase in the size and volume of all fibroids. The pregnancy evolved uneventful until term. The patient was admitted to the hospital at 37 weeks gestational age, having mild prelabor uterine contractions. After a 6 hours surveillance, the uterine tonus became abnormally increased, the patient had abdominal and back pain, without cervical changes and the cardiotocography showed sudden, severe and persistent fetal bradycardia. An emergency cesarean section (CS) was decided. Intraoperative, an 1800 torsion of the uterus was discovered. An extremely rapid transversal low posterior incision was performed, between the uterosacral ligaments, to extract the critically endangered fetus. After restoring the normal position of the corpus and performing the uterine suture, although there are still controversies about performing myomectomy during CS, all subserous fibroids were successfully removed. Both mother and child had a full recovery and were discharged after 4 days. **CONCLUSION:** Normally, the uterine ligaments have stabilizing effects during pregnancy. We present a rare case of complete uterine torsion with details from the preconceptional period, during pregnancy, intraoperative features, and short and long-term follow-up. The preoperative diagnosis is particularly difficult, even with advanced imaging techniques such as US. The major event has nonspecific and often subtle clinical and imagistic signs. Although uterine torsion is a rare complication, its occurrence can lead to devastating consequences if not early recognized and timely intervened. In the case presented, both mother and newborn had a favorable outcome.

20. MODIFIED T-CONFIGURED DUAL STENT TECHNIQUE FOR A COMPLEX BASILAR TIP ANEURYSM

Alexandra Rusu¹, Alexandru-Sebastian Stoica¹, Adrian Gavriliuț¹

Alexandru Chiriac, MD, PhD¹

¹"Grigore T. Popa" University of Medicine and Pharmacy Iași

BACKGROUND: Aneurysmal subarachnoid hemorrhage is the major cause of premature mortality in neurovascular pathology. Cerebral arterial bifurcation apexes represent the most prevalent site of aneurysm formation due to maximal hemodynamic stresses. Minimally invasive treatment of wide-necked complex bifurcation aneurysms frequently requires double stent-assisted coil embolization in various configurations. The T-configured dual stent technique involves a nonoverlapping implantation of two stents to protect the daughter vessels of the bifurcation, followed by coiling of the aneurysm. **CASE PRESENTATION:** We present the case of a forty-four-year-old patient admitted to our emergency department in an unconscious state with mild nuchal rigidity. The family declared a history of hypertension with no regular treatment and severe cephalalgia with sudden onset twenty-four hours prior to admission. Cranio-cerebral computed tomography (CT) revealed mild hydrocephalus and subarachnoid hemorrhage predominantly located in the basal cisterns and the left Sylvian fissure. CT angiogram depicted a complex basilar tip aneurysm. Firstly, an external ventricular drain was implanted. The following day, the three-dimensional digital subtraction angiography (DSA) reconstruction showed a large complex basilar tip aneurysm with two lobes in an hourglass anatomical configuration and a very wide neck involving both posterior cerebral artery junctions, originating from an asymmetric relation with the aneurysm sac. Due to the complex anatomical configuration and the presence of multiple perforating arteries in this region, a slightly modified T-configuration stent-assisted coiling was proposed with continuous heparinization during the procedure. Final DSA images demonstrated a "Raymond-Roy class I" aneurysm occlusion with no neck remnant, coil herniation, clot formation or branch occlusion, and with no perioperative complications. The patient's evolution was progressive with partial recovery of gait difficulties, dizziness and nystagmus at two weeks. **CONCLUSION:** The double stent-assisted coiling technique is a feasible, effective and relatively safe endovascular procedure for the treatment of complex wide-neck cerebral aneurysms located at different bifurcation sites according to current medical literature. However, aspects such as the anatomy, angulation and take-off of the vessels play a crucial role in choosing the appropriate technique. The challenge of this case was to adapt the T-configuration stent-assisted coiling technique for favourable clinical outcomes and satisfactory results considering the unique features of the aneurysm.

21. AN INCIDENTAL FINDING OF A AVM IN A PEDIATRIC PATIENT WITH A SUBARACHNOID HEMORRHAGEVladislav Velchev¹, Petar-Preslav Petrov², Plamen Penchev¹Ivan Mindov, MD³¹Faculty of Medicine, Medical University of Plovdiv²Department of Anatomy, Histology and Embryology, Medical University of Plovdiv³Department of Neurosurgery and Spine Surgery, Neuwerk Hospital, Mönchengladbach, Germany

BACKGROUND: Cerebral arteriovenous malformations (CAVMs) are a type of congenital vascular lesion, in which arterial feeders shunt blood directly into the venous system of the brain via a tangle of pathological vessels. They carry risk of causing clinical manifestations such as intracerebral hemorrhages, seizures, neurological deficits and migraines. Diagnosis is based on imaging modalities such as angiography, MRI and CT. Treatment modalities include conservative therapy, microsurgical resection, stereotactic radiosurgery, endovascular embolization and various multidisciplinary approaches. We aim to introduce the case of a pediatric patient with an intracranial hematoma caused by a ruptured cAVM which was discovered intraoperatively due to imaging modality limitations, and evaluate her recovery and long-term outcomes. **CASE PRESENTATION:** A 10-year-old female has presented to the ER after losing consciousness at home. A CT scan of her head revealed the presence of an intracerebral hematoma. An increase in the size of the hematoma in the following hours led to significant neurological and vital deterioration. Emergent temporo-parietal craniotomy was performed. Intraoperatively, a cAVM was discovered and successfully excised. Postoperatively, the patient demonstrated gradual improvement of her neurological condition. Her parents refused the use of MRI or angiography in order to assess the scope of the cAVM's venous drainage network and arterial feeders. The patient's follow-up checks over the course of six months showed satisfactory neurological improvement. **CONCLUSION:** While intracranial hematomas can be reliably treated via surgical evacuation, the intraoperative discovery of underlying cAVMs can prove to be challenging, as it significantly alters the scope and course of the operative intervention and thus endangers the patient. Further studies and recommendations for surgical staff in such an event should be issued by the neurosurgical community in order to minimize morbidity in a relatively limited number of high-risk cases.

22. EXPLORING RETROPERITONEAL LIPOSARCOMAS: A JOURNEY THROUGH DIAGNOSIS AND THERAPEUTIC APPROACHESIoana-Ecaterina Barnea¹, Bogdan-Cosmin Hîncu¹, Lucia-Elena Jantea¹Asst. Lect. Petru Soroceanu, MD, PhD^{1,2,3}¹"Grigore T. Popa" University of Medicine and Pharmacy²"Sf. Spiridon" County Clinical Emergency Hospital, Iasi,³"Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Department of Surgery

BACKGROUND: Liposarcomas (LPS) represent a subtype of soft tissue sarcoma (STS), heterogeneous tumors of mesenchymal tissue derived from abnormal adipocytic differentiation, with a prevalence of approximately 20% of STS and 1% of all malignancies. LPS comprise of four main histological categories: well-differentiated (WDL), dedifferentiated (DDL), pleomorphic (PL) and myxoid (ML), each one requiring different clinical approaches and treatment courses. ML characterize 10% of STS (peak age of 50 y.o.), with various localisations like the retroperitoneum, extremities or mediastinum. There is no apparent symptomatology and first clinical manifestations start when the tumor adheres and invades adjacent structures (blood vessels, viscera, nerves). Therefore, this case report aims to analyze ML's diagnosis, patient management, and treatment. **CASE PRESENTATION:** 54-year-old male patient is admitted to the Emergency Department accusing perianal pain and fever for the last two days. Physical examination revealed a perianal abscess, which followed immediate surgical treatment, and a painless, irreducible, solid, non-pulsatile mass was noticed under Malgaigne's line. Medical history suggested its presence three years ago. Further investigations (contrast-enhanced computed tomography) revealed a large retroperitoneal mass measuring 117/131/203mm with high indication of LPS. The multilobulated growth included both right inferior epigastric artery and right deep circumflex iliac alongside the pelvic iliac segment of right ureter, leading to mild pelvicalyceal distension. After a J-J stent placement, the multidisciplinary surgical team opted for median laparotomy extended to the root of the thigh, inguinal ligament transection and radical tumor resection. Right-sided orchiectomy due to spermatic cord invasion was performed and antero-lateral abdominal wall reconstruction concluded the surgical procedure. Besides lymphorrhagia (200ml/24h, treated with 10% povidone-iodine instillation), there were no post-surgery complications. Pathology examinations confirmed low-grade ML staging pT4N0 G2 L0V0Pn0 and consequently the patient underwent six cycles of chemotherapy (doxorubicin, ifosfamide) alongside mesna, with medical follow-ups still ongoing. **CONCLUSION:** Clinical and paraclinical particularities include the absence of specific symptoms, incidental diagnosis, extensive tumor size and an interdisciplinary approach. Different histological subtypes suggest LPS might have various presentations and outcomes, but consistent therapy can optimise patient's life quality.

23. COMPLEX SURGICAL MANAGEMENT OF THORACIC SPINE TRAUMA – HIGH-SPEED BICYCLE ACCIDENT AFTERMATH

Cosmin-Ştefan Velnic^{1,2}, Nicolae Florin Iftimie^{1,2}, Alexandru Ionuţ Sănduleanu^{1,2}

Jan Kocand, MD³

¹University of Medicine and Pharmacy "Gr. T. Popa" Iaşi

²Romanian Student Society of Surgery

³University Hospital Brno-Bohunice

BACKGROUND: Spinal trauma resulting from high-speed accidents can present with complex challenges that require immediate and specialized surgical interventions. This case report highlights the management of a patient who sustained multiple thoracic vertebral fractures and complications, emphasizing the decision-making process, surgical approach, and postoperative care in achieving optimal outcomes. **CASE PRESENTATION:** A 44-year-old male was admitted to the Orthopaedic Surgery department in FN Brno-Bohunice following a high-speed bicycle accident, presenting with back pain, left pneumothorax, and desaturation. Initial X-Ray imaging, confirmed by following CT-scan revealed multiple thoracic vertebral fractures (T4, T7, T8, T9), a sternal fracture, bilateral fluidothorax, and an epidural hematoma extending from C2 to T11. The patient was stabilized with a chest drain and prepared for urgent spinal surgery. On 03.08.2024, a T4-T11 posterior spinal stabilization and T8 laminectomy were performed, followed by a second surgery, on 09.08.2024, involving a trans-thoracic approach for a T8 somatectomy and anterior fusion from T7 to T9. Postoperative recovery was stable, with no significant complications noted, and the patient was discharged and repatriated 14 days post-admission. **CONCLUSION:** This case demonstrates the effective multidisciplinary management of complex thoracic spinal injuries resulting from trauma in which early diagnosis, timely intervention, and surgical precision contribute to patient's successful recovery. This case report highlights the importance of a well-coordinated approach in managing severe spinal trauma to optimize patient outcomes and minimize complications.

24. SURGICAL INSIGHTS INTO RECURRENT FORAMEN MAGNUM MENINGIOMA: A CLINICAL CASE

Matei-George Ilie¹, Andreea Atomei, MD², Bogdan-Tudor Bugeac¹

Assoc. Prof. Eva Lucian, MD, PhD²

¹Grigore T. Popa University of Medicine and Pharmacy Iaşi

²Emergency Hospital Profesor Doctor Nicolae Oblu Iaşi

BACKGROUND: Foramen magnum is an anatomical structure belonging to the occipital bone, that functions like a passage between the cranial box and the vertebral canal, allowing the passing of the spinal bulb, which is continued by the spinal cord, the two vertebral arteries and the accessory nerves. Meningioma is the most common type of primary brain tumour, accounting for approximately 30 percent of all brain tumours. Given the importance of the neurovascular structures at this level, a foramen magnum injury requires an appropriate and complex management, aspects of which are illustrated by the following case. **CASE PRESENTATION:** A 55-year-old patient with multiple associated cardio-pulmonary and metabolic comorbidities and a known meningioma of the foramen magnum that was diagnosed and operated on two years ago, later recurred, was reoperated on, and treated with postoperative radiotherapy. The patient was hospitalised with intracranial hypertension syndrome that developed a month before arrival, with progressive worsening and diplopia. The clinical picture included hypoesthesia in the right hemibody and paresis of the left hypoglossal nerve, which developed two years ago. MRI imaging with contrast, revealed a recurrent tumour at the foramen magnum, left paramedian, exerting a mass effect on the medulla, left cerebral hemisphere, and the spinal cord, while embedding the left vertebral artery. Surgery was performed, aiming of tumour resection and decompression of adjacent nervous structures. During surgery, a well vascularised, broad dural insertion mass that is relatively bounded by the surrounding structures, predominantly left-sided, with increased consistency and is identified. A subtotal resection is performed, preserving the residual tumour that envelops the left vertebral artery. Postoperatively, the intracranial hypertension syndrome resolved. **CONCLUSION:** In the therapeutical management of foramen magnum lesions, special attention must be given to preserving the vital neurovascular structures. Preoperative preparation includes careful study of the lesion's relationship with adjacent anatomical structures. The resection of the tumour must ensure the decompression of the nervous structures and a favourable long-term prognosis, while preserving the integrity of nervous and vascular structures. Both the modern technology for localisation and resection, as well as adjuvant treatment methods contribute to achieving good long-term outcomes in foramen magnum formations.

25. SURGICAL MANAGEMENT AND RECONSTRUCTION OF LOWER LIP WITH SQUAMOUS CELL CARCINOMADaria Elena Druhuș¹, Alexandru Nicolae Lupoi, MD²Ioan Marinescu, MD³¹University of Medicine and Pharmacy "Gr. T. Popa" Iași²Spitalul Clinic de Urgență și Chirurgie Plastică, Reconstructivă și Arsuri" Bucharest³Colentina Hospital Bucharest

BACKGROUND: Squamous cell carcinoma is a common type of skin cancer that originates in the squamous cells of the skin's outer layer. It often appears as a scaly patch, sore, or lump, and is primarily caused by prolonged sun exposure. While squamous cell carcinoma is generally treatable, it can become invasive and spread to other parts of the body if not treated early. **CASE PRESENTATION:** A 72-year-old male patient presented with a tumorous lesion on the lower lip, close to the right angle of the mouth. The lesion was reddish-brown, vegetative in appearance, and had been previously diagnosed as malignant by the Dermatology department. At the time of his presentation to the outpatient clinic, the patient was stable and showed no significant pathological changes. Surgical intervention was planned to excise the tumor with an oncological safety margin of 2 cm around the lesion. Due to its location and infiltration into surrounding tissue, both the orbicularis and buccinator muscles had to be severed during the excision. Reconstruction of the resulting defect involved the use of two musculo-muco-cutaneous flaps. The first flap was rotated from the upper lip, with consideration of the vascular supply from the inferior labial artery to ensure adequate blood flow. The second flap was created by advancing tissue from the left side of the lower lip and part of the cheek, achieved through a series of deep triangular incisions. The muscle and mucosal layers of the lower lip were sutured to restore its shape, followed by closure of the outer defect using simple discontinuous sutures. Histopathological examination of the excised tissue confirmed the diagnosis of squamous cell carcinoma. **CONCLUSION:** This case demonstrates the successful surgical management of the patient. The use of musculo-muco-cutaneous flaps enabled effective tumor removal and reconstruction of the lip, preserving both function and appearance. This approach underscores the importance of early intervention and customized reconstruction in treating invasive squamous cell carcinoma.

26. ROBOT ASSISTED RADICAL PROSTATECTOMY A 40 YEARS OLD MALE PATIENTIoannis Vakalidis¹, Konstinios Vakalidis, MD²¹Carol Davila University of Medicine and Pharmacy Bucharest,²Saint Luke Hospital Thessaloniki

BACKGROUND: Radical prostatectomy remains the gold-standard treatment for clinically localized prostate cancer and Da Vinci robot represents the aid to offer the patient more benefits compared to open and laparoscopic surgery, such as better oncological outcomes (margin free rate) and functional outcomes (decreased pain, scarring, recovery time, lower incontinence and erectile dysfunction rate). The choice of procedure was robotic radical prostatectomy with Neurosafe procedure due to the young age of the patient. **CASE PRESENTATION:** the patient, 40 year old male, presented initially a macroscopic hematuria. The urologist performed a total abdominal ultrasound and the blood test indicated a PSA level of 14.5 ng/mL. The multiparametric prostatic MRI showed a peripheric prostatic lesion framed IRM PIRADS 5. This was followed by a fusion biopsy which revealed malignant biopsies, histological score Gleason 6 (3+3), group grade 1 of adenocarcinoma. The stadialization involved bone scintigraphy and CT thoraco-abdomino-pelvic native with contrast substance. Due to the negative bone scintigraphy and the normal CT, the prostate cancer was localized, the surgeon's best recommendation being radical prostatectomy with Da Vinci robot. The surgery with lymphadenectomy was performed in 180 minutes, without complications, with Neurosafe procedure - best suited for young people to prevent sexual impotence. A catheter was introduced for better anastomosis and the patient was discharged after 2 days with good lab tests. The catheter and the surgical sutures were removed after 10 days. The patient recovered excellent post-surgery and the pathology report concluded that the lymph nodes were free of neoplastic infiltration. The patient needs to be followed up only with PSA results after 1 month, 3 month and 6 month post-surgery. **CONCLUSION:** According to the literature, an increasing incidence of prostate cancer in men ages 20 to 49 years, especially since 1991 was observed, younger men being more likely to be recommended prostatectomy and to have lower grade cancer. Also, the studies that patients younger than 50 years with prostate cancer less frequently showed initial signs of lower urinary tract symptoms. Da Vinci robot approach with radical prostatectomy proved to be the best suitable surgical option overall for this young patient.

27. FROM BURN SCAR TO SKIN CANCER: SURGICAL MANAGEMENT OF MARJOLIN'S ULCERAlexandru-Ionuț Sănduleanu¹, Cosmin-Ștefan VELNIC¹, Nicolae-Florin Iftimie¹Asst. Lect. Irina Mihaela JEMNOSCHI-HRENIUC, MD, PhD²¹"Grigore T. Popa" University of Medicine and Pharmacy Iași,²CFR Clinical Hospital Iași

BACKGROUND: Marjolin's ulcer is a rare form of skin cancer developing on previously traumatized, inflamed, or burned tissue, resulting in a hypertrophic scar (0.7-2% of all burn victims) long after the initial insult of the skin. The most common malignancy manifestation is squamous cell carcinoma (90%), involving rapid metastasis and a bad prognosis if late diagnosed. This case report aims to analyze the management of treating this type of tumor and understand its pathophysiology. **CASE PRESENTATION:** We report the case of a 37-year-old female patient who presents with an inflamed, painful, ulcerated lesion of the right knee, that developed over the past year. The formation measures ~7 cm in diameter, with irregular contours, red-grey coloration, hardened cratered edges, and mobile to the underlying tissue. Her pathological history includes a post-burn scar over her lower right limb, which occurred 35 years prior, raising the suspicion for Marjolin's ulcer. An ultrasound of the soft tissues revealed no contact with any major blood vessels or the joint, located supra fascial, suggesting no infiltration. She is scheduled for wide local excision of the mass, within oncological limits, and skin graft implantation, harvested from the iliac crest region, without notable complications. After histopathological examination, the diagnosis is squamous cell carcinoma, developed on the precancerous lesion. Upon discharge, she receives oncological follow-ups regularly, with no recurring or metastasis observed over two years. Immunohistochemistry is pivotal in studying hypertrophic scar molecular markers (collagen; TGF- β). In Marjolin's ulcer, anarchic synthesis of collagen aggravates the mechanical stimulation of the scar, and malignant cells are avoided by the immune system through the obliteration of local lymph vessels and poor vascularization. **CONCLUSION:** Marjolin's ulcers are the product of an aberrant wound-healing process, ruled by uncontrolled collagen formation. Malignant development in burn victims is a poor outcome, and rapid surgical excision and regular oncological assessments are the gold standard in dealing with this type of lesion. This case proves that burn scars become a chronic condition, and monitoring them over time should be a standard of care.

28. ENDOMETRIOSIS - FROM HIDDEN PAIN TO HEALTHY REPRODUCTIONMaria-Gabriela Munteanu¹Andreea-Ruxandra Albu^{1,2}¹Carol Davila University of Medicine and Pharmacy²Department of Obstetrics and Gynecology, University Emergency Hospital Bucharest

BACKGROUND: Endometriosis is a disease characterized by the presence of endometrium-like epithelium and/or stroma outside the endometrium and myometrium, usually accompanied by inflammation. The following symptoms are associated with endometriosis: abdominopelvic pain, dysmenorrhea, heavy menstrual bleeding, infertility, dyspareunia, nausea, anxiety or depression. Endometriosis remains an under or misdiagnosed disease, a significant cause of morbidity that reduces quality of life in reproductive-age women. **CASE PRESENTATION:** We present the case of a 24-year-old woman, diagnosed with endometriosis, who presents at the ER for anorectal and chronic pelvic pain. The first hospital presentation was in 2021 in Italy, where she had her first open abdominal surgery. Despite the contraceptive treatment she was prescribed following surgery, she became pregnant and gave birth in 2021 through C-section. The laboratory tests show an elevated level of serum CA 125. The transvaginal ultrasound shows several endometriomas on the right ovary. During the procedure, 5 endometriomas ranging from 1 to 5 cm in diameter were excised from the right ovary and 3 infracentimetric ones from the left ovary. She opted for open abdominal surgery, declining laparoscopic approach. Right ovarian adhesiolysis was performed. A 2 cm posterior isthmus nodule involving the median rectum was found with complete occlusion of the Douglas pouch. The general surgeon was involved due to the possibility of rectal involvement and thorough dissection. Uterosacral ligaments were resected where invaded. Restoration of the Douglas pouch and ovarian suspension at the parietal peritoneum were performed. The patient is dismissed with favorable evolution, absence of pain and prospects of pregnancy. **CONCLUSION:** Diagnosing endometriosis can be facilitated by a reliable pelvic MRI, helping with planning the operation and counseling the patient. Detecting the profound lesions leads to an extensive and complete excision of the endometriotic tissue. A successful surgical procedure increases patient's chances to continue her reproductive life.

29. PRIMARY MENINGEAL B-CELL LYMPHOMA WITH INVOLVEMENT OF THE CALVARIA - A RARE CASEPlamen Penchev¹, Ivan Mindoc, MD²¹Faculty of Medicine, Medical University of Plovdiv, Bulgaria²Department of Neurosurgery and Spine Surgery, Neuwerk Hospital - RWTH Aachen University, Mönchengladbach, Germany

BACKGROUND: Primary dural lymphoma (PDL) is a rare and aggressive extranodal non-Hodgkin's lymphoma, classified as a subtype of primary central nervous system lymphoma, occurring only within the central nervous system. Intracranial lymphomas represent 1-5% of all intracranial neoplasms. Diffuse large B-cell lymphoma (DLBCL) with epidural or subdural involvement is an extremely rare variant of this tumor, representing less than 1% of all brain lymphomas and approximately 0.1% of all lymphomas globally. This case report aims to emphasize an uncommon case of primary dural lymphoma with involvement of the cranial vault and scalp, highlighting the significance of early diagnosis, imaging features, and personalized treatment for improved patient outcomes. **CASE PRESENTATION:** We report a case of a 40-year-old patient with PDL, with involvement of the cranial vault and scalp. A Computer Tomography (CT) scan with 3D reconstruction of the skull revealed an iso- to hyperdense tumorous mass located beneath the right parietal bone, with involvement of both bone and scalp. A non-contrast-enhanced magnetic resonance imaging (MRI) was performed. The patient underwent decompressive craniotomy, resulting in full tumor excision under general anesthesia. The histology diagnosis following surgery was meningeal large B-cell lymphoma. Postoperatively, the patient was referred to the Haematology department to undergo further chemotherapy courses. **CONCLUSION:** This rare tumor should be included in the differential diagnosis of meningeal and scalp lesions. Timely diagnosis along with personalised treatment is the accepted standard for good patient outcomes. The frequency of both early and late surgical complications must also be taken into account.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

**ABSTRACTS OF THE
MEDICAL ACADEMICAL
CONFERENCE OF PIAUÍ
(COMAPI) 2023**

IJMS

INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS

Abstracts of the Medical Academical Conference of Piauí

01. CLINICAL AND EPIDEMIOLOGICAL PROFILE OF LEPROSY IN WOMEN OF FERTILE AGE IN PIAUÍ

Louise Mota da Rocha Sady¹; Luísa Neiva Araújo¹; Marília Mendes Vasconcelos²; Maria Cristina Magalhães de Freitas Dutra²; Beatriz Afonso Ferreira Coelho Silton³.

¹Discente da Universidade UNIFACID

²Discente da Universidade UNINOVAFAPI

³Médica Dermatologista Pelo IMIP

INTRODUCTION: Leprosy and women's reproductive age have an antagonistic relationship and risk to their health, with contraception being a key factor in monitoring this group. **OBJECTIVES:** To evaluate the clinical and epidemiological profile of leprosy in women of childbearing age, reported in Piauí from 2012 to 2022. **METHODS:** Descriptive epidemiological study, with a quantitative approach, using SINAN, made available by DATASUS. The following were analyzed: cases by year, sex, race, age group, education, operational classification, clinical classification, reaction episode and type of discharge. The data used is freely accessible, justifying the absence of an opinion from the Research Ethics Committee. **RESULTS:** Between 2012 and 2022, 11,805 cases of leprosy were reported in the state of Piauí, of which 5,189 (43.9%) were female, with 2,857 (55%) of these, of childbearing age. Regarding race, there is a predominance of women considered mixed race, with 2,034 (39.2%) cases. Regarding the age group, the three most prevalent are: 40 to 49 years old with 951 (18.3%) of cases, followed by 30 to 39 years old with 859 cases (16.5%), and 20 to 29 years old with 598 cases (11.5%) cases. Regarding education, 371 (12.9%) of fertile women have completed the 1st to 4th grade of primary education. In the operational classification, the multibacillary cluster stands out, with 1,605 (56.1%) cases. In the clinical form, the dominance is 1079 (37.7%) cases of the Dimorphous form, 744 (26%) Indeterminate, 271 (9.48%) tuberculoid and 157 (5.49%) Virchowian. Regarding reactional episodes, 2,001 (70%), the majority progressed without occurrence, however, among those that progressed to Type 1 it was the most common with 208 (7.28%) cases. Finally, a cure appears in 2,164 (75.7%) cases, being the most prevalent stage. **CONCLUSION:** The clinical and epidemiological profile of women with leprosy in Piauí of childbearing age is that of a mixed-race woman, aged between 40 and 49 years, with low education, with multibacillary type leprosy, with a dimorphic clinical condition and a good response to treatment, progressing to cure. Therefore, the data reveal a high incidence of the disease in women of reproductive age, with a profile where detailed monitoring of these cases is necessary, with instructions mainly regarding contraception, in order to avoid risky pregnancies, relapses or worsening of the disease.

02. EPIDEMIOLOGICAL ANALYSIS OF ADMISSIONS FOR RESPIRATORY DISEASES IN CHILDREN AND ADOLESCENTS ATTENDED IN PUBLIC HOSPITALS WITH OTOLARYNGOLOGY SERVICE IN PIAUÍ

Camila Carvalho da Fonseca¹, Cícero Ferreira Lima Júnior¹, Jéssica Bonfim Mendes Cosentino¹, Maria Clara Leônidas Santos¹, Raquel Fontenele Santos¹ and Virna de Moraes Brandão¹.

¹University Center UNINOVAFAPI

INTRODUCTION: Respiratory diseases represent one of the main public health challenges worldwide, especially when it comes to children and adolescents. These age groups are particularly vulnerable to respiratory complications due to a number of factors, including a still developing immune system, exposure to viral and bacterial infections, and social environments such as schools and daycare centers. In the context of public hospitals, where the demand for healthcare is high and resources are often limited, hospitalizations for respiratory diseases in children and adolescents present a major challenge. **OBJECTIVES:** Investigate the profile of hospital admissions for respiratory diseases in children and adolescents in Piauí. **METHODS:** Observational and descriptive epidemiological study, about cases of hospital morbidity due to respiratory diseases in children and adolescents, in the state of Piauí – BR from January 2018 to March 2023. The data collected were obtained through the Department of Informatics of the Unified Health System in Brazil (DATASUS), from which data from the SUS Hospital Morbidity Information System (SIH/SUS) in Piauí were used. **RESULTS:** In this study, 34,904 hospital admissions for respiratory diseases were recorded, in children and adolescents, in the state of Piauí – BR from January 2018 to March 2023, of which 9,552 (27.3%) were in the capital Teresina – PI, followed by the city of São Raimundo Nonato with 2,182 (6.2%). Pneumonia had a higher incidence during this period, accounting for 56.5% (19,754) of hospitalization cases. The age group most affected by pneumonia were children aged 1 to 4 years, 41.4% (8,193), followed by children under 1 year, 20.3% (4,015). **CONCLUSION:** This study allowed us to epidemiologically analyze hospitalizations for respiratory diseases in children and adolescents treated in public hospitals with otolaryngology services in Piauí, highlighting the profile of affected patients, the average length of stay and the number of deaths caused by them. The epidemiological analysis proves that hospitalizations for respiratory diseases in children and adolescents occur in most cases due to pneumonia, in male patients, between 1 and 4 years of age, with an average stay of 4.9 days and with evolution to death in 31.3% of the 412 deaths caused by respiratory diseases in the period 2018-2023.

03. **SURGICAL TREATMENT OF PANCREATIC PSEUDOCYST IN A PATIENT WITH ACUTE CHRONIC PANCREATITIS: A CASE REPORT.**

Juliana Sousa Santos¹, Emília Victória Simões Cabral Coimbra², Ana Karoline Corado Cavalcante Barros³, Kássio Roberto de Barros Alves⁴, Luis Gustavo Cavalcante Reinaldo⁵ and Vitória de Sá Bezerra⁶.

¹Uninovafapi University Center

INTRODUCTION: Pancreatic pseudocyst is a benign condition and constitutes one of the main complications of pancreatitis. It is characterized by being an encapsulated lesion containing liquid collections inside, such as pancreatic, hematic secretion or abscess. Its evolution, when asymptomatic, is treated conservatively. However, in symptomatic cases, the presence of abdominal pain, nausea, bilious vomiting and dyspepsia is noted, with drainage, whether surgical or endoscopic, being the treatment of choice. We present a case report of a patient with pancreatic cyst post- acute chronic pancreatitis, with satisfactory resolution of the clinical condition, who underwent a surgical approach with cystojejunal Roux-en-Y anastomosis. **CASE REPORT:** Patient, 45 years old, male, diabetic type 2, with chronic pancreatitis due to alcoholism, on a history of multiple previous hospitalizations due to intense abdominal pain and vomiting. During his last hospitalization, he underwent magnetic resonance imaging (MRI) and computed tomography (CT) of the upper abdomen with contrast, both showing a significant reduction in pancreatic volume, observing only the cervix and cephalic portions with normal characteristics and lack of definition of the corpus-caudal segment. Furthermore, they showed a homogeneous, circumscribed and well-defined cystic formation, with thin walls and lobulated contours, without enhancement after intravenous contrast, in the topography of the left hypochondrium, at the level of the pancreatic tail pocket, measuring 8.0 x 4.8 x 4.6 cm, compatible with pancreatic pseudocyst. Therefore, the patient was taken to surgery, with Roux-en-Y cystojejunal anastomosis + excision of a small fragment of the cystic capsule for pathology. During the patient's hospitalization, he remained in good general condition and was asymptomatic, being discharged from hospital on the seventh postoperative day and receiving outpatient follow-up. Upon outpatient return, 30 days after surgery, the patient remained asymptomatic. Histopathology revealed: fibroadipose tissue with chronic inflammatory infiltrate. **FINAL CONSIDERATIONS:** Through the report, it is possible to verify the importance of the surgical approach in the treatment of symptomatic pseudocysts. Therefore, complementary imaging tests, such as MRI and CT, are methods of choice for diagnosing this pathology. Once detected, it can be managed through appropriate treatment, in order to completely resolve the patient's clinical condition.

04. **INVESTIGATION OF POTENTIAL DRUG INTERACTIONS IN TYPE II DIABETIC AND HYPERTENSIVE PATIENTS**

Maria Clara Ramos Ribeiro¹; José de Ribamar Portugal Neto²; Mônica Cecília Fernandes Clemente³; Talles Davi de Valença Moura Soares dos Anjos⁴; Sheila Elke Araújo Nunes⁵.

^{1,2,3,4,5}State University of the Tocantina Region of the Southwest of Maranhão

INTRODUCTION: Type II diabetes mellitus (T2DM) and hypertension are chronic diseases of significant prevalence in the Brazilian population. As a result of these pathologies, it is common to therapy with the use of polypharmaceuticals, daily and, consequently, the increased risks of drug interactions that can lead to adverse effects. **OBJECTIVES:** To investigate polypharmacy and drug interactions in diabetic and hypertensive patients. **METHODS:** During home visits, patients registered in a micro- area of the Bom Sucesso Basic Health Unit, Imperatriz, Maranhão, Brazil were approached, with the participation of the Community Health Agent (ACS). All were over 18 years of age, expressed agreement to participate in the research and signed the Informed Consent Term. Patients were investigated for the diagnosis of T2DM and hypertension and for the daily use of medications. Finally, with the help of the softwares "Medscape" and "Drugs.com Medication Guide", the drug interactions between the drugs were analyzed. This work was submitted to the Ethics Committee and research on human beings and approved under the consolidated opinion no. 5,246,867. **RESULTS:** It was found that of the 35 patients visited, aged 48 to 87 years, 88.5%, had a diagnosis for diabetes and hypertension and 33 (97%) used two or more medications for continuous use. Among the main drug interactions found and that can cause health risks, are the association between thiazide diuretics and biguanides, through the concomitant use of Hydrochlorothiazide and Metformin (36.3%), leading to hyperglycemia and risks of lactic acidosis. In addition, 18.2% of the patients analyzed used the combination of calcium channel blockers of the dihydropyridine class and thiazide diuretics, by the simultaneous use of Hydrochlorothiazide and Amlodipine Besylate, which can result in increased hypotensive effect. **CONCLUSION:** The association of multiple drugs in the pharmacotherapy of patients with T2DM and hypertension is, in most cases, inevitable. Thus, this population deserves the special attention of the Basic Health Team regarding the monitoring of therapy, enabling the safety of these patients using polypharmacy.

05. **ANALYSIS OF ADVERSE POST-VACCINATION EVENTS RELATED TO COVID-19 VACCINE IN THE MID-NORTHERN MACROREGION IN THE STATE OF PIAUÍ**

Anna Márcia Leal de Sousa¹, Antônio Tiago da Silva Souza¹; Angela Gabrielle Santos Sousa¹; Diego dos Santos Silva¹; Samara Menali Pereira Caproni² and Edmar José Fortes Júnior³.

¹Federal University of the Delta of Parnaíba

²José do Rosário Vellano University

³Institute of Higher Education of Vale do Parnaíba

INTRODUCTION: An adverse event following vaccination (AEFI) is any unwanted occurrence after vaccination that does not necessarily have a causal link with the use of a vaccine or other immunological agent. **OBJECTIVES:** To analyze the AEFI for COVID-19 vaccines reported in public health services in the Mid-Northern macroregion in the state of Piauí. **METHODS:** A retrospective study based on secondary data from the Post-Vaccination Adverse Events Information System (SI-EAPV) of the State Immunization Program of the State of Piauí/Brazil of AEFI cases associated with COVID-19 vaccines reported in 2021. The project was approved by the Research Ethics Committee of the Federal University of Piauí (CEP/UFPI) (Opinion No. 4.305.494). **RESULTS:** 1,054 AEFIs were reported in the period investigated. Of this total, 785 (n = 74.48%) were women, with a predominance of brown people (n = 505, 47.91%). The most notified municipalities were Teresina (n = 919, 87.19%), followed by Cocal de Telha (n = 19, 1.80%), and Castelo do Piauí (n = 14, 1.33%). The immunobiologicals with the highest prevalence of AEFI were Oxford Astrazeneca (n = 757, 71.82%), Sinovac Butantan (n = 182, 17.27%), and Pfizer (n = 108, 10.25%). The most common adverse events were headache (n = 479, 14.32%), followed by myalgia (n = 423, 12.65%), and fever (n = 407, 12.17%). **CONCLUSION:** Although the administration of immunobiologicals produces adversities, the advantages outweigh the risks, showing an advantageous cost-benefit ratio. It is necessary to implement a continuous and systematic process for monitoring these events since they are the main instrument for controlling vaccine safety.

06. **OROPHARYNGEAL CANCER IN PIAUÍ: ANALYSIS OF DEATHS (2018-2020).**

Maria Clara Leonidas Santos, Raquel Fontenele Santos¹, Talya Aguiar de Lima¹, Lorena Martins Silva¹, Dina Isabel Mendes Pereira¹ and Jessica Bonfim Mendes Consentino¹.

¹Uninovafapi University Center

INTRODUCTION: An adverse event following vaccination (AEFI) is any unwanted occurrence after vaccination that does not necessarily have a causal link with the use of a vaccine or other immunological agent. **OBJECTIVES:** To analyze the AEFI for COVID-19 vaccines reported in public health services in the Mid-Northern macroregion in the state of Piauí. **METHODS:** A retrospective study based on secondary data from the Post-Vaccination Adverse Events Information System (SI-EAPV) of the State Immunization Program of the State of Piauí/Brazil of AEFI cases associated with COVID-19 vaccines reported in 2021. The project was approved by the Research Ethics Committee of the Federal University of Piauí (CEP/UFPI) (Opinion No. 4.305.494). **RESULTS:** 1,054 AEFIs were reported in the period investigated. Of this total, 785 (n = 74.48%) were women, with a predominance of brown people (n = 505, 47.91%). The most notified municipalities were Teresina (n = 919, 87.19%), followed by Cocal de Telha (n = 19, 1.80%), and Castelo do Piauí (n = 14, 1.33%). The immunobiologicals with the highest prevalence of AEFI were Oxford Astrazeneca (n = 757, 71.82%), Sinovac Butantan (n = 182, 17.27%), and Pfizer (n = 108, 10.25%). The most common adverse events were headache (n = 479, 14.32%), followed by myalgia (n = 423, 12.65%), and fever (n = 407, 12.17%). **CONCLUSION:** Although the administration of immunobiologicals produces adversities, the advantages outweigh the risks, showing an advantageous cost-benefit ratio. It is necessary to implement a continuous and systematic process for monitoring these events since they are the main instrument for controlling vaccine safety.

07. **CHARACTERIZATION OF ADVERSE POST-VACCINATION EVENTS RELATED TO THE MMR VACCINE IN THE MID-NORTHERN MACROREGION OF PIAUÍ**

Anna Márcia Leal de Sousa¹, Antônio Tiago da Silva Souza¹; Angela Gabrielle Santos Sousa¹; Diego dos Santos Silva¹; Samara Menali Pereira Caproni² and Edmar José Fortes Júnior³.

¹Federal University of the Delta of Parnaíba; ² José do Rosário Vellano University; ³Institute of Higher Education of Vale do Parnaíba

INTRODUCTION: An adverse event following vaccination (AEFI) is any unwanted occurrence after vaccination that does not necessarily have a causal link with the use of a vaccine or other immunological agent. **OBJECTIVES:** To analyze the AEFI for COVID-19 vaccines reported in public health services in the Mid-Northern macroregion in the state of Piauí. **METHODS:** A retrospective study based on secondary data from the Post-Vaccination Adverse Events Information System (SI-EAPV) of the State Immunization Program of the State of Piauí/Brazil of AEFI cases associated with COVID-19 vaccines reported in 2021. The project was approved by the Research Ethics Committee of the Federal University of Piauí (CEP/UFPI) (Opinion No. 4.305.494). **RESULTS:** 1,054 AEFIs were reported in the period investigated. Of this total, 785 (n = 74.48%) were women, with a predominance of brown people (n = 505, 47.91%). The most notified municipalities were Teresina (n = 919, 87.19%), followed by Cocal de Telha (n = 19, 1.80%), and Castelo do Piauí (n = 14, 1.33%). The immunobiologicals with the highest prevalence of AEFI were Oxford Astrazeneca (n = 757, 71.82%), Sinovac Butantan (n = 182, 17.27%), and Pfizer (n = 108, 10.25%). The most common adverse events were headache (n = 479, 14.32%), followed by myalgia (n = 423, 12.65%), and fever (n = 407, 12.17%). **CONCLUSION:** Although the administration of immunobiologicals produces adversities, the advantages outweigh the risks, showing an advantageous cost-benefit ratio. It is necessary to implement a continuous and systematic process for monitoring these events since they are the main instrument for controlling vaccine safety.

08. **SITUATIONAL ANALYSIS OF PATIENTS WITH T2DM ASSISTED BY A BASIC HEALTH UNIT IN THE MARANHENSE SOUTHWEST**

Talles Davi de Valença Moura Soares dos Anjos¹; Mônica Cecília Fernandes Clemente¹; José de Ribamar Portugal Neto¹; Maria Clara Ramos Ribeiro¹; Sheila Elke Araújo Nunes¹.

¹State University of the Tocantina Region of the Southwest of Maranhão

INTRODUCTION: Type 2 Diabetes Mellitus (T2DM) is associated with obesity and aging, complications of which are the main causes of early morbidity and mortality, being prevented or delayed through adherence to treatment and the development of self-care practices: healthy eating, physical activity, foot care and proper use of the medication. **OBJECTIVES:** To evaluate treatment adherence and self-care of patients with T2DM. **METHODS:** Home visits were made to patients over 18 years of age with T2DM assisted by the Bom Sucesso Basic Health Unit, in the city of Imperatriz, Maranhão, Brazil. Capillary blood glucose, blood pressure, weight, height, BMI and waist circumference (WC) were measured and the Diabetes Self-Care Activities Questionnaire – DSCAQ was applied. This research received approval from the Research Ethics Committee of Hospital Carlos Macieira, through Plataforma Brasil, CAAE: 55572722.80000.8907, under opinion no. 5,246,867. All participants signed an Informed Consent Form. **RESULTS:** 35 diabetics were interviewed, with a majority of women (68.5%) compared to men (31.4%), average age of 63 years and prevalence of incomplete primary education (51.6%). The anthropometric assessment of the patients showed overweight (47%) and increased WC (94.1%), especially in women (100%). In the glycemic assessment and adherence to treatment, there were increased values for fasting (65.3%) and postprandial (50%) glycemia and use of daily medication as recommended by the doctor (74.3%), with polymedicated consumption of four or more daily medications (53%). Regarding the assessment of lifestyle habits in the last seven days prior to the research, 43% of patients did not follow a healthy diet on any day, 65.7% did not practice specific physical activity, 31.4% did not evaluate their feet, 48.5% ate sweets on all seven days, 5.7% smoke cigarettes and 20% drank alcoholic beverages. About the complications associated with T2DM, there was a prevalence of cardiovascular changes (22%), with emphasis on hypertension (88.6%). **CONCLUSION:** Thus, it was observed in the patients low adherence to treatment and to self-care practices. Therefore, it is essential to monitor these individuals, aiming to promote health education to increase the level of knowledge about this disease and encourage self-care practices as strategies to prevent or delay future complications.

09. GLANZMANN THROMBOASTHENIA: CASE REPORT OF A RARE DISORDER IN A ADOLESCENT PIAUIENSE

Eulalia Barbosa da Paz Neta¹; Karla Lais Ribeiro da Costa Araújo²; Fernando Antônio Costa Anunciação³; Bianca Marques de Sousa¹; João de Jesus Cantinho Júnior⁴.

¹Facid Wyden University Center

²University Center Uninovafapi,

³Federal University of Maranhão

⁴State University of Piauí

INTRODUCTION: Glanzmann's thromboasthenia is a rare hereditary platelet disorder characterized by the absence of clot retraction, whose clinical manifestations include symptoms such as epistaxis, purpura, gingival hemorrhage and menorrhagia. This pathology occurs due to abnormalities in the autosomal recessive ITGA2B and ITGB3 genes. **CASE REPORT:** Woman, 17 years old, diagnosed for 6 years with Glanzmann's thromboasthenia, in irregular follow-up with hematologist, is admitted to the Intensive Care Unit with menometrorrhagia and epistaxis for 4 days, with progressive worsening, developing into a hypovolemic shock. As an initial procedure were administered concentrate of red blood cells, platelets and recombinant factor VII, in addition to tranexamic acid. Only with improvement of menometrorrhagia on the sixth day of hospitalization after the use of Desogestrel. For not prior authorization of the responsible for the patient, it was only possible to start the use of this medication on the 6th day of hospitalization, with improvement and cessation of epistaxis on the 7th day of hospitalization and progressive improvement of menometrorrhagia, using concentrate of red blood cells and platelets, Factor VII recombinant activated (rFVIIa) and intermittent use of tranexamic acid in relapses. Patient evolved hemodynamically stable, without changes, in neurological, infectious and hemodynamic surveillance, with guidelines for regular outpatient follow-up with hematologist. **FINAL CONSIDERATIONS:** It is concluded that the treatment is individualized, based on the clinic, ranging from hemostasis, to the use of antifibrinolytics, platelet transfusions, contraceptives, activated factor VII, patient orientation aimed at preventing situations of greater risk for bleeding. As well as, early diagnosis is essential for prophylaxis and rapid control of abnormal bleeding, treatment of severe cases, as well as genetic counseling of carriers. In addition to sharing and discussing the clinical environment of disorders such as Glanzmann's thromboasthenia, allowing greater recognition of the pathology by health professionals.

10. EPIDEMIOLOGICAL PROFILE OF POLYPHARMACOTHERAPY IN ELDERLY PEOPLE ATTENDED IN A BASIC HEALTH UNIT IN IMPERATRIZ, MARANHÃO

José de Ribamar Portugal Neto¹; Maria Clara Ramos Ribeiro¹; Talles Davi de Valença Moura Soares dos Anjos¹; Mônica Cecília Fernandes Clemente¹; Sheila Elke de Araújo Nunes¹.

¹State University of the Tocantina Region of the Southwest of Maranhão

INTRODUCTION: The increase in life expectancy and multimorbidity associated with the greater availability of medicines on the market and the lack of a therapeutic consensus have generated a threat to patient safety through polypharmacotherapy. Drug combinations have been common, mainly in the treatment of hypertensive and diabetic patients, ignoring the possibilities of interaction, the number of medications and the consequences for individuals. **OBJECTIVES:** To investigate polypharmacotherapy in diabetic and hypertensive patients. **METHODS:** Home visits were made to patients over 18 years of age with Type 2 Diabetes Mellitus (T2DM) assisted by the Bom Sucesso Basic Health Unit in the city of Imperatriz, Maranhão, Brazil. Capillary blood glucose, blood pressure and anthropometric measurements were measured, in addition to the questionnaire regarding daily medication for T2DM and hypertension and for other health problems. This research received approval from the Research Ethics Committee under opinion no. 5.246.867. All participants signed an Informed Consent Form. **RESULTS:** In this research, 35 patients diagnosed with DM2 participated with an average age of 63 years, 31 (88.5%) had hypertension as a secondary disease, 10 were male (32.3%) and 21 were female (67.7%). At the end, 147 drugs were counted, 49 (33.3%) for diabetes, 67 (45.6%) for hypertension and 31 (21.1%) for other pathologies. Regarding the number of medications administered, 33 patients (97.0%) take two or more medications, of these, 15 take two to three medications (44.1%), 12 take four to six (35.3%) and 6 take six or more (17.6%), with the average being 4.3 per patient. Thus, considering the use of 4 or more medications, the prevalence of polypharmacy in the studied sample was 53.0%, with 33.3% represented by the male group and 66.7% by the female group. **CONCLUSION:** Polypharmacotherapy is a reality for people with chronic diseases of this research, which can result in systemic complications. In this context, monitoring these patients is essential to reduce the possible consequences of this practice.

11. **EPIDEMIOLOGICAL EVALUATION OF DEATHS FROM MALIGNANT CERVICAL NEOPLASIA: ANALYSIS OF A DECADE**

Caio Henrique Carneiro Da Cunha Guimarães¹; Maria Eduarda Martins Farias¹; Lucas Venicio Mesquita De Oliveira¹; Alisson Torres Fontenele Junior¹; Bruna Moschen Petri Lages¹.

¹Uninovafapi University Center.

INTRODUCTION: Malignant cervical neoplasia (MCN) is the second most common female neoplasm and, after breast cancer, is the fourth leading cause of cancer death among Brazilian women. The development of this disease is related to exposure to HPV, as well as the early age of first sexual intercourse, multiple sexual partners and other factors, including smoking and immunodeficiency. These cases, if not identified and treated early, can lead to death. **OBJECTIVES:** This study aims to evaluate the number of deaths in the SUS from malignant cervical neoplasia over a 10-year period (2013- 2022). **METHODS:** This is a retrospective epidemiological study, with a quantitative and descriptive bias, of cases of death in the SUS due to malignant cervical neoplasia. The data was obtained from the DATASUS/TABNET platform and the following variables were used: age group, region and race. **RESULTS:** In the period analyzed, 24,583 deaths from malignant cervical neoplasia were identified in Brazil, with 2022 being the year with the highest occurrences, registering 2,779 (11.3%) cases, and 2014 being the year with the lowest notifications, corresponding to 2080 (8.4%) patients. It was observed that in the last 5 years (2018-2023), there has been an increase of 1,936 cases, compared to the 5 most distant years (2013-2017). In addition, it was noted that the most affected age group was 50 to 59 years old, with 5,774 (23.4%) cases, followed by 40 to 49 years old, with 5,328 (21.6%), the most affected race was brown with 10,781 (43.8%) deaths, and the most prevalent region was the southeast region with 10,087 (41%) deaths, followed by the northeast region, with 6,764 (27.5%) notifications. **CONCLUSION:** After analyzing the data, it can be concluded that there has been an increase in the number of deaths from malignant cervical neoplasia in Brazil. This increase occurred mainly in the last 5 years (2018-2022) and intensified in 2022, with the peak of reported deaths. The most affected population are women in late adulthood (50-59 years), brown and from the southeast region. In this sense, there is a need to intensify screening for this pathology, as well as to diagnose and treat affected women at an early stage.

12. **ADMISSIONS FOR MIGRAINES AND HEADACHES: EPIDEMIOLOGICAL CHARACTER OF THE STATE OF PIAUÍ**

Ana Letícia Almendra Freitas do Rego Monteiro¹; Dannyellen Lorena Sampaio Alves¹; Gustavo Wolfgang Alexandre Rodrigues¹; Letícia Freitas Paiva¹; Noélia Maria de Sousa Leal².

¹Unifacid Wyden University Student

²Unifacid Wyden University Teacher

INTRODUCTION: Migraine is a chronic disease characterized by at least 5 headache attacks lasting between 4 and 72 hours, with symptoms ranging from unilateral, throbbing pain of moderate or severe intensity, exacerbated by routine physical activities. Data from the World Health Organization (WHO) indicate that migraine affects approximately 31 million Brazilians. **OBJECTIVE:** To analyze the epidemiological profile of migraines and cephalic algias in the state of Piauí from 2012 to 2022. **METHODOLOGY:** This is an epidemiological, documentary and quantitative study of an exploratory, descriptive and retrospective nature, based on data on hospitalizations for migraines and cephalic algias in Piauí from 2012 to 2022, obtained from the Hospital Information System of the Unified Health System (SIH/SUS), through the Department of Informatics of the Unified Health System (DATASUS). As this is a study based on data collection from a public domain platform, there was no need to submit it to the Ethics Committee (CEP), since there are no ethical or moral implications or identification of the patients taking part in the study. **RESULTS:** In the period analyzed, 740 hospitalizations for migraine and other headache syndromes were reported in the state of Piauí. Among these cases, 68.92% occurred in the population aged between 20 and 59, of which 19.45% were individuals aged between 20 and 29. Only 12.03% of cases were registered in people under 20 and 19.05% in people over 59. As for gender, there was a prevalence of hospitalizations among women, with 69.7% occurring among females and 30.3% among males. **CONCLUSION:** In view of the above, it can be concluded that there was a higher incidence of hospitalizations for migraine and other headache syndromes in females and in the 20-59 age group. Thus, it can be seen that in Piauí these cases mainly affect the economically active population and can be disabling according to the WHO. Therefore, it is necessary to understand the epidemiological profile of this pathology, in order to improve the implementation of public policies that address this imbroglia, with the aim of obtaining better prognoses and reducing the incidence rate of the disease.

13. **EPIDEMIOLOGICAL ANALYSIS OF OCCUPATIONAL ACCIDENTS WITH EXPOSURE TO BIOLOGICAL MATERIAL AMONG PHYSICIANS IN PIAUÍ FROM 2018 TO 2022**

Bruna Beatriz Gomes Bonfim Santos¹, Rommayolle Costa Diniz de Sousa¹, Antônio Marcos Medeiros de Oliveira¹, Lucas Furtado Barros¹, Lara Bianca Cardoso Pereira¹ e Juciele Cícera da Silva².

¹State University of Maranhão

² General Surgeon at the State University of Piauí

INTRODUCTION: Work-related accidents involving exposure to biological materials have been increasing in the Brazilian context over the last five years. Within the medical field, the handling of biological materials is a common professional practice, contributing to a significant number of cases in this context. Thus, the significance of the situation presented becomes evident, necessitating the direction of educational public policies. **OBJECTIVES:** To outline the epidemiological analysis of work-related accidents involving exposure to biological materials among physicians in Piauí from 2018 to 2022. **METHODS:** This is a quantitative and retrospective epidemiological study using the Sistema de Informações e Agravos de Notificação (SINAN), with data collection carried out through the DataSUS-Tabnet platform. The criteria studied included gender, type of exposure, and case outcome. **RESULTS:** It was observed that from 2018 to 2022, 251 cases were reported. In this context, 58.96% were male. Regarding the case outcome, 10.35% resulted in discharge without seroconversion, while 35.45% were discharged with the source patient testing negative, 6.77% abandoned treatment, and only 3.98% had discharges with seroconversion. As for the type of exposure, 100% were percutaneous exposures. **CONCLUSION:** Therefore, this study highlights that the most affected individuals are male physicians. Furthermore, the high rate of percutaneous exposure justifies the need for clarification regarding recommended precautions and protections to prevent an increase in case numbers in the state of Piauí. The low rate of discharges with seroconversion reflects the effectiveness of treatment. However, from the analysis of these cases, the importance of socio-educational projects is reiterated with the aim of preventing and reducing disease incidence.

14. **ALCOHOLIC LIVER DISEASE IN PIAUÍ FROM 2008 TO 2022: AN EPIDEMIOLOGICAL ANALYSIS**

Izabely Dos Reis De Paula¹, Vitor Expedito Alves Ribeiro¹, Carlos Portela Ibiapina Neto¹, Gabriel Stumpf Bastos Amorim¹, Camilly Vanessa Da Rocha Barros¹ and Rogerio Santiago Araujo¹.

¹State University of Piauí

² Federal University of Piauí

INTRODUCTION: Alcoholic liver disease (ALD) encompasses a wide spectrum of pathologies such as simple steatosis, alcoholic hepatitis and liver cirrhosis. ALD has high mortality and morbidity, therefore, it is essential that epidemiological data be investigated and used to develop public health strategies. **OBJECTIVES:** Evaluate the epidemiological profile of records of hospitalizations for ALD between the years 2008 and 2022 in the state of Piauí, based on the temporal evolution of the disease in the State. **METHODS:** An epidemiological study, retrospective and quantitative in nature, was conducted utilizing data collected from DATASUS - Department of Information and Informatics of the Brazilian Unified Health System: information technology in service of SUS. The variables were tabulated and analyzed descriptively using GraphPad Prism. **RESULTS:** Between the periods of 2008-2022, 2921 cases of ALD were reported in Piauí. The health regions with the highest prevalence were Vale dos Rios Piauí and Itaueira with 11.48 cases and Tabuleiros do Alto Parnaíba with 8.9 cases, both per 100,000 inhabitants. The highest incidence was among men, 81.2%. The age group from 30 to 59 was the most affected, representing 69.3%. The disease was most lethal between 70 and 79 years old, with a mortality rate (MR) of 20.86%. **CONCLUSION:** The results show that ALD primarily affects young adult men; however, it has a higher fatality rate among those aged 60 to 79. The nature of patient visits suggests that those affected seek medical attention only when clinical symptoms manifest as a result of the condition worsening. The results of linear regression suggest that the clinical management and pharmacological treatment of ALD patients have not made significant advancements or investments when compared to the progression of the disease, in line with existing literature data. The projected analysis of TM indicates growth. Therefore, it is important to encourage the early identification of ALD in primary care and invest in the study of more efficient therapies.

15. **MONDOR DISEASE IN 16 PATIENTS: A SERIES OF CASES**
Izabely Dos Reis De Paula¹, Anderson Gustavo Santos De Oliveira¹, Francisco Aragão De Sousa Neto¹, Layla Lorrana De Sousa Costa¹, Carlos Matheus Meireles De Oliveira¹ and Sabas Carlos Vieira¹

¹State University of Piauí

²Federal University of Piauí

INTRODUCTION: Mammary Mondor Disease (MMD) is a rare type of superficial thrombophlebitis of the subcutaneous region of the breast, an idiopathic disease, which may be associated with coagulopathies, trauma and breast neoplasia, occurring in the form of a thick, fibrous cord. It is a self-limited and benign condition, which generally presents skin retraction and pain at the level of the affected vessel. The present study seeks to describe clinical-epidemiological aspects of 16 patients diagnosed with MMD. **CASE SERIES:** The 16 patients in the study were treated between 2009 and 2020 in a private Oncology clinic located in the city of Teresina (PI). The average age was 53.25 years. Among the patients (N=9/56.25%) reported pain as the main complaint that led them to the consultation, (N=6/37.5%) sought the service for evaluation of a nodule as an ultrasound finding and (N=1/6.25%) of patients sought assistance due to breast hardening. The thrombophlebitis characteristic of MMD was noticeable in 9 of the patients. In 56.25% of patients, there was carcinoma or carcinoma in situ as an event prior to MMD, 18.75% had a breast prosthesis implanted previously. In 100% of cases, symptoms regressed within two to six weeks and the palpable thrombosed vessel disappeared within six to seven months, corroborating data from the literature. Only 1 patient developed cancer subsequent to the development of MMD. As an event prior to MMD, breast implant implantation, carcinoma, carcinoma in situ, lymphocytic mastitis or mechanical impact were present in 81.25 patients, being (N=9/56.25%) carcinoma and (N=4/25%) breast prosthesis. **FINAL CONSIDERATIONS:** It is important that an active search for MMD is carried out during routine gynecological evaluation and adequate treatment can be established, as even though it is a rare diagnosis, it presents significant morbidity. The cases in the series presented are in accordance with data from the world literature on MMD in its clinical presentations, anatomopathological characteristics, treatments and outcomes, showing that it is a more frequent condition in adult women, especially in the presence of a previous event such as carcinoma or implantation of a non-aggressive breast prosthesis, with a good prognosis and self-limiting.

16. **HOSPITALIZATIONS DUE TO PNEUMONIA IN PIAUÍ FROM 2012 TO 2022: AN EPIDEMIOLOGICAL ANALYSIS**

Gabriel Stumpf Bastos Amorim¹; Camilly Vanessa da Rocha Barros¹; Carlos Portela Ibiapina Neto¹; Izabely dos Reis de Paula²; Vitor Expedito Alves Ribeiro¹; Carla Maria de Carvalho Leite¹.

¹Federal University of Piauí (UFPI).

²State University of Piauí (UESPI).

INTRODUCTION: Pneumonia is an acute respiratory infection characterized by inflammation of the lung tissues. It can be caused by a variety of infectious agents, such as bacteria, viruses, fungi, and parasites, and it affects millions of people worldwide, representing a significant cause of morbidity and mortality. **OBJECTIVES:** To evaluate the epidemiological evolution of hospitalizations due to pneumonia from 2013 to 2022 in Piauí, analyzing its trend. **METHODS:** An ecological epidemiological study that used data from the Hospital Information System of the Unified Health System (DATA-SUS). The analyzed variables were the year of processing, hospitalizations, deaths, and mortality rate. Simple linear regression was performed to analyze the trend, using GraphPad Prism 9 software for data analysis. **RESULTS:** In 2022, the number of hospitalizations, deaths, and the mortality rate were, respectively, 14,651, 1,085, and 7.41%. The percentage change in the number of hospitalizations, deaths, and mortality rate over the past ten years was, respectively, -3.46%, +163.99%, and +173.43%. Simple linear regression of the data revealed that the number of hospitalizations is decreasing by 337.8 hospitalizations per year ($Y = -337.8X + 695149$), the number of deaths ($Y = 57.50X - 115323$) is increasing by 57.50 deaths per year, and the mortality rate is increasing by 0.56% per year ($Y = 0.5601X - 1125$). **CONCLUSION:** Despite the decline in the number of hospitalizations, the number of deaths from pneumonia-related hospitalizations in Piauí continues to rise due to the increasing mortality rate. Therefore, the percentage change in hospitalizations indicates a possible effectiveness of initial pneumonia treatment strategies. On the other hand, the lethality has shown a substantial increase, suggesting a potential vulnerability of the population, possibly associated with population aging. This highlights the importance of improving the capacity to treat complications, emphasizing the need for health authorities to act, such as increasing the number of ICU beds.

17. EPIDEMIOLOGICAL ANALYSIS OF CASES OF MALIGNANT COLONNEOPLASIA IN THE STATE OF PIAUÍ

Carlos Vinicius de Alencar Leite¹; João Victor Costa Uchôa¹; Mariane Ferraz Nunes¹; Geovana Ribeiro Fernandes Queiroz¹; Laísa Oliveira Silva Cavalcante¹; Noélia, Maria de Sousa Leal².

¹ Unifacid Wyden University Student

² Unifacid Wyden University Teacher

INTRODUCTION: Colon cancer is among the most common cancers in the Brazilian population and develops slowly, silently. Thus, it is necessary that screening be done on all people over the age of 50 in Piauí. This malignant neoplasm of the intestine originates in adenomatous polyps that, although benign, can malignant and evolve into cancer. **OBJECTIVE:** To outline the epidemiological profile of cases of malignant neoplasm of the colon in the state of Piauí, from 2012 to 2022. **METHODOLOGY:** This was an epidemiological, documentary, and quantitative study of an exploratory, descriptive, and retrospective nature, based on data obtained from SIH – DATASUS and SIA – DATASUS, regarding cases of malignant neoplasm of the colon in the period from 2012 to 2022 in the state of Piauí, where the following variables were analyzed: total number of reported cases, colonoscopies presented, nature of care, deaths, age group and gender. **RESULTS:** During the period studied, 5,051 cases of malignant neoplasms of the colon were reported in the state of Piauí, in which there was a prevalence in 2017 with 873 cases (17.28%) and the lowest number in 2021 with 262 cases (5.18%). In this period studied, 20,235 colonoscopies were presented, with a lower number in 2020, when there were 691 exams (3.41%) and 2021, with 701 exams (3.46%). Among the reported cases, 3,904 (77.29%) received outpatient care and 1,147 (22.70%) were treated urgently. Regarding deaths, 221 cases were reported. Regarding the prevalent age group, the number of cases was more prevalent in the period between 40 and 79 years old, totaling 4,273 (84.59%). In addition, 2,893 (57.27%) cases were females and 2,158 (42.72%) were males. **CONCLUSION:** In view of the above, it was observed that the causes of malignant colon neoplasms are more frequent in women than in men, and that age is an important factor in determining the predisposition or even the genetic issue and environmental factors. It may lead to believe that men between 40 and 79 years of age have a greater predisposition to develop this neoplasm, in addition to being noticeable in the case of the disease.

18. NON-HODGKIN LYMPHOMA: CASE REPORT PIAUÍ

Lucas Luan Gonçalves Barros Leal¹, Bianca Marques de Sousa¹, José Hamon de Lima Rodrigues¹, João Pedro Rosal Miranda¹, Eulalia Barbosa da Paz Neta¹ and Danilo Pedro Martírios Luz²

¹ University Center UniFacid

² University Center UNINOVAFAPI

INTRODUCTION: Non-Hodgkin's Lymphoma (NHL) corresponds to a group of lymphocytic neoplasms, derived predominantly from B lymphocytes, but can also originate from T lymphocytes or natural killer cells. Symptoms vary widely, including painless adenomegaly, unexplained fever, night sweats, fatigue, cough, chest or abdominal pain, inappetence, pruritus and others. The diagnosis of NHL is made by excisional biopsy of the lymph node together with immunophenotyping to determine the cell type. **CASE REPORT:** P.J.S., a 55-year-old male patient with hypertension who had been under investigation for 3 months for painless, progressively growing cervical lymph nodes, was admitted reporting dyspnea on exertion, hyporexia, asthenia limiting daily activities, weight loss of 7 kg, fever, vomiting and multiple episodes of diarrhea with bloody streaks. On physical examination, he was hypochloric ++/4, with multiple 2cm palpable lymph nodes in the left superficial cervical chain, mobile and elastic in consistency, and with crackling rales on lung auscultation. He brought a CT scan of the neck showing atypical lymph node enlargement in the bilateral cervical region, a CT scan of the chest showing lymph node enlargement in the axillary region bilaterally and a CT scan of the abdomen showing homogeneous splenomegaly and lymph node enlargement in the inguinal and iliac chains bilaterally. Rapid tests for HIV, syphilis, hepatitis C and HBsAG were not reactive. Video endoscopy showed mild pangastritis and mild bulboduodenitis. A blood count was requested, which showed severe anemia, leukopenia and severe thrombocytopenia, and a histopathology of the cervical lymph node, which was compatible with NHL. He received concentrated red blood cells and platelets and continued to be hospitalized with bloody diarrhea and worsening dyspnea and fever. Tranexamic acid, vitamin K and dipyron were used. Antibiotic therapy was started with ciprofloxacin and clindamycin and a 3l/min O₂ nasal catheter was used. On the 5th day of hospitalization, the patient's condition worsened with increased rectal bleeding, hypotension, tachycardia and acute respiratory failure. He was referred to the stabilization room, where he died, and the staging and treatment of the lymphoma were not completed. **FINAL CONSIDERATIONS:** The importance of early diagnosis and staging of NHL in order to start treatment as soon as possible in an attempt to avoid possible associated complications and improve the quality of life of affected patients is highlighted.

19. **EPIDEMIOLOGICAL OVERVIEW OF CONGENITAL SYPHILIS IN THE STATE OF PIAUÍ: ANALYSIS OF A DECADE**

Livia Vilarinho Santos Barbosa¹, Raí de Moura Ribeiro¹, Samuel de Castro Campos¹, Thaís de Negreiros Neves¹, Ary Andrade Viana¹ and Kelly Palombit¹.

¹ Federal University of Piauí

INTRODUCTION: Congenital Syphilis (CS) is caused by the bacterium *Treponema pallidum*, through vertical transmission. It has high transmission rates and is responsible for causing miscarriages and malformations in newborns, when left untreated. **OBJECTIVES:** To analyze the cases of CS in the state of Piauí over a decade. **METHODS:** This is a ecological time-series, retrospective study with a quantitative approach, using secondary data from the Department of Information Technology of the Unified Health System (DATASUS), referring to cases of CS in the state of Piauí from 2012 to 2021. The variables year, confirmed cases, evolution, final classification, incidence and mortality rate, mother's age group and schooling, prenatal care and period of diagnosis of maternal syphilis were analyzed over the period. **RESULTS:** In the period analyzed, 2,805 cases of CS were recorded in the state of Piauí. 2018 was the year with the highest incidence rate (10.04 cases per 1,000 live births in the year), while 2012 was the year with the lowest incidence (1.79 cases per 1,000 live births in the year). In this decade, 95.96% of notifications were diagnosed within 6 days of life, 93.80% were classified as recent CS and 93.16% of notified babies remained alive. With reference to mortality, 41 (1.46% of notified cases) deaths from CS were recorded, with 2012 having no records of mortality from CS in DATASUS, and 2017 having the highest mortality rate (18.54). The profile of the mothers of the babies with CS was of women aged between 20 and 24 (29.16%), with schooling from 5th to 8th grade of incomplete primary education (28.16%), who had prenatal care (85.20%), and who had been diagnosed with maternal syphilis during prenatal care (46.63%). **CONCLUSION:** The results found in this study show that the occurrence of CS and the mortality associated with it still have considerable rates in the state of Piauí. The number of cases has fallen since 2019 and more sharply in the period of the pandemic caused by the SARS-CoV-2 virus, responsible for COVID-19. The discrepancy between the number of prenatal appointments and CS diagnoses in this decade may indicate inadequate prenatal care. Regarding the maternal profile, there was agreement with the data already published in the literature.

20. **CARDIAC SURGERY IN A PATIENT WITH ASYMPTOMATIC SEVERE AORTIC STENOSIS: A CASE REPORT**

Marjana Pinheiro Bulhão¹, Lucas da Silva Dias¹, Juliana Jansen Tateno¹, Nezzilla Ribeiro dos Anjos¹, Stefhane Katiucia Pereira de Carvalho¹ and Karla Valéria Oliveira Lopes¹.

¹Afya Faculty of Medical Sciences Santa Inês

INTRODUCTION: Aortic stenosis (AS) represents for 35% of moderate to severe valvular heart disease and consists of obstruction of the left ventricular (LV) outflow tract. Due to progressive calcification of the aortic valve leaflets, which leads to reduced valve area, LV hemodynamic overload and ventricular hypertrophy. As blood supply becomes insufficient, LV ischemia and dysfunction occur. **CASE REPORT:** CJB, female, 55 years old, former smoker and dyslipidemic. She sought medical attention reporting a sensation of tinnitus in the right ear and pulsation in the sternal notch for 4 years. On auscultation, a heart murmur was identified. The transthoracic echocardiogram (TTE) showed severe stenosis of the bicuspid aortic valve, and the patient was referred to the cardiac surgery service for valve replacement due to the presence of complicating factors, as she had no symptoms due to the congenital etiology of AS. According to the Brazilian Guideline on Valvular Heart Diseases (2020), it is recommended to evaluate complicating factors to perform surgical intervention in asymptomatic cases of AS, namely: TTE with LV ejection fraction < 50% and/or aortic valve area (AVA) < 0.7 cm² (patient with 0.54 cm²), maximum aortic jet velocity > 5.0 m/s and mean LV/Aortic gradient > 60 mmHg (patient with 120 mmHg measured by catheterization). Other parameters include: exercise stress test with absence of inotropic reserve and/or low functional capacity, arterial hypotension during exertion with a 20 mmHg drop in systolic blood pressure and/or presence of symptoms at low loads. The patient also had a maximum and average systolic gradient of 92 and 73 mmHg, respectively. She was registered on surgery wait list, remaining asymptomatic for more than 1 year. About 3 months before the procedure, she developed anginal chest pain, a factor that increases the risk of sudden death, and urgent surgery was requested. Therefore, surgical indication in the absence of symptoms in a severe AS was based on aggravating factors, until months before surgery, when the patient started experiencing symptoms. After valve replacement, the patient was discharged from hospital and continues to use Warfarin Sodium ad eternum and monthly cardiological monitoring to control International Normalized Ratio between two and three, aiming to prevent valve thrombosis. **FINAL CONSIDERATIONS:** In this case, the importance of investigating complicating parameters in cases of asymptomatic valvular heart disease is evident to offer patients better therapeutic follow-up.

21. THE IMPACT OF THE COVID-19 PANDEMIC ON THE DEGREE OF PHYSICAL IMPAIRMENT OF LEPROSY AT THE TIME OF DIAGNOSIS IN PIAUÍLetícia Oliveira Pereira¹, Francisco Matheus Alves Fonseca¹,
Lucas Gonçalves da Rocha Lima¹, Simone Soares Lima¹.¹ Federal University of Piauí

INTRODUCTION: Leprosy is a transmissible disease caused by *Mycobacterium leprae*, affecting the skin and peripheral nerves, and if left untreated, can lead to severe disabilities and social exclusion. Leprosy can be classified based on the degree of physical impairment, also known as the grade of disability (GD) at the time of diagnosis, with GD 0 corresponding to no physical alterations on physical examination, G1D indicating a decrease in sensory perception and/or muscle strength, and G2D representing visible impairments. The proportion of new leprosy cases diagnosed with G2D is a crucial indicator for assessing delayed diagnosis. **OBJECTIVES:** The objective was to analyze the impacts of the COVID-19 pandemic on the delayed reporting of leprosy in Piauí, based on the degree of physical impairment at the time of diagnosis. **METHODS:** Cross-sectional study. Data were collected from the Sistema de Notificação de Agravos de Notificação (SINAN) and tabulated using the TabNet tool from 2017 to 2022. The proportion of G2D cases relative to the total cases for each year in the study period was calculated using percentages, and the incidence rate (IR) was calculated by dividing the number of reported leprosy cases with G2D in SINAN by the estimated population of the state of Piauí in 2021 (EP) as recorded by the Instituto Brasileiro de Geografia e Estatística (IBGE) using the formula: $IR = G2D/EP \times 1,000,000$, with results expressed per million inhabitants for each year. **RESULTS:** In the years prior to the pandemic, the percentage of reported leprosy cases with G2D at the time of diagnosis in relation to the total cases was 7.4% in 2017, 7.4% in 2018, and 6% in 2019. From 2020 onwards, there is an increasing trend in this indicator, reaching 8.5% in 2020, 10.0% in 2021, and 9.0% in 2022. When comparing 2019, the last year before the pandemic, with 2021, the year in which COVID-19 infection led to higher mortality rates in Brazil, there was a 66.7% increase in this indicator. The IR of G2D, per 1 million inhabitants, was 20.9 cases in 2019 and 26.7 cases in 2021, representing a 27.8% increase. **CONCLUSION:** Comparing the years 2019 and 2021, significant increases in the percentage of G2D leprosy cases in relation to the total and the IR can be observed. This leads to speculation that the pandemic may have caused delays in the diagnosis of leprosy in the state, potentially resulting in irreversible consequences for affected individuals.

22. THE IMPACT OF THE COVID-19 PANDEMIC ON THE NOTIFICATION OF CONGENITAL SYPHILIS IN PIAUÍFrancisco Matheus Alves Fonseca¹, Letícia Oliveira Pereira¹,
Lucas Gonçalves da Rocha Lima¹, Simone Soares Lima¹.¹ Federal University of Piauí

INTRODUCTION: Congenital syphilis (CS) is an infection transmitted from the mother to the fetus through transplacental transmission in pregnant women infected with *Treponema pallidum*. The main manifestations of CS include prematurity, low birth weight, hepatosplenomegaly, jaundice, anemia, thrombocytopenia, lymphadenopathy, as well as bone, skin, and neuropsychomotor alterations. The diagnosis of CS requires mandatory reporting, and when delayed, can lead to intellectual, auditory, and skeletal sequelae.

OBJECTIVES: The objective was to analyze the impacts of the COVID-19 pandemic on the notification of CS in Piauí and, as a secondary goal, to compare it with data from Brazil. **METHODS:** Cross-sectional study. Data were collected from the Sistema de Notificação de Agravos de Notificação (SINAN) and tabulated using the TabNet tool from 2015 to 2020. The incidence rate (IR) of CS was calculated by dividing the number of reported CS cases in SINAN by the number of live births (LB) recorded in the Plataforma Integrada de Vigilância em Saúde (IVIS) of the Ministry of Health in the same year using the formula: $IR = CS/LB \times 1000$, with results expressed per thousand LB (‰). The CS IR was compared in the years before (2015 to 2019) and after the start of the COVID-19 pandemic (2020). **RESULTS:** Between the years 2015 and 2019, the CS IR consistently remained above eight per thousand LB, with an average of 8.65 and a standard deviation of 0.88, with the highest value recorded in 2018 (2015: 8.00‰; 2016: 8.00‰; 2017: 8.92‰; 2018: 10.08‰; 2019: 8.26‰). In 2020, this rate decreased to 5.46‰, representing a 36.88% drop compared to the average of the previous five years and a 31.75% decrease compared to the lowest IR during that period (8.00‰). Similarly, in Brazil, a decrease in CS IR was observed between 2018 (9.00‰) and 2020 (7.70‰), with a 14.4% difference, according to data described in the Syphilis Epidemiological Bulletin from the Ministry of Health. The notification of CS was only updated in SINAN until June 2021, preventing the inclusion of that year in the evaluation. **CONCLUSION:** The notification of CS in Piauí during the COVID-19 pandemic decreased more significantly than observed in Brazil. Thus, a strong impact of the COVID-19 pandemic on CS is speculated, as underreporting and treatment delays can lead to permanent and severe consequences for those affected, in addition to masking significant statistics for public health planning.

23. **OCCURRENCE OF ADVERSE EVENTS POST-MMR VACCINATION IN THE STATE OF PIAUÍ BETWEEN THE YEARS OF 2014 TO 2019**

Francisco Augusto Coelho da Silva¹, Lorena Kelly Fernandes de Carvalho², Maria Clara Duarte Feitosa³ and Antônio Tiago Da Silva Souza³.

¹ Federal University of Piauí

² UNINOVAFAPI University Center

³ State University of Piauí

INTRODUCTION: The development of vaccines has proven to be one of the most successful and profitable public health measures. However, the impact of the use of vaccines on a society has several facets and can lead, although rarely, to the occurrence of adverse event following immunization (AEFI), which are considered any unwanted medical occurrence after vaccination. **OBJECTIVES:** To investigate the reporting of adverse events after the MMR vaccine in the population served in public health services in the state of Piauí from 2014 to 2019. **METHODS:** Epidemiological, documentary, retrospective, descriptive, cross-sectional, quantitative study using data from the Post-Vaccination Adverse Events Surveillance Information System of the State Department of Health of Piauí. Adverse events following triple viral vaccination in Piauí from 2014 to 2019 were evaluated based on the selected variables: sex, age, color/race, city, immunobiological agent, route of administration and adverse events. The study was approved by the Ethics Committee of the Federal University of Piauí (Opinion nº 4,305,494). **RESULTS:** It was observed the notification of 80 cases of adverse events following triple viral vaccination in the state of Piauí in the period from 2014 to 2019, being higher in females (60%, n=48), which may be associated with hyperactivated immune responses in this sex after vaccination. It predominated in the age group from 5 to 9 years (47.5%, n=38) and from 1 to 4 years (28.75%, n=23). Regarding color, most of the data was ignored or blank (55%, n=44). The cases predominated in the municipality of Guaribas (45%, n=36). As for the immunobiological, the triple viral vaccine alone predominated (83.75%, n=67) and as for the route of administration, most of it was intramuscular (46.25%, n=37). The types of AEFI were immunization error (77.5%, n=62), non-serious (17.5%, n=14) and severe (5%, n=4). Considering non-serious and severe AEFI, 3 patients presented only local manifestations, 14 presented only systemic manifestations, 1 presented local and systemic manifestations. **CONCLUSION:** In general, the MMR vaccine proved to be poorly reactogenic and well tolerated, rarely associated with serious adverse events. Most AEFIs occurred in children under 10 years of age, females who received the MMR vaccine alone intramuscularly.

24. **MECKEL'S DIVERTICULUM CAUSING INTESTINAL OBSTRUCTION IN A PEDIATRIC PATIENT: CASE REPORT**

Maria Eduarda Farias de Carvalho¹, Francisco Augusto Coelho da Silva², Ruana Stephany Macedo Santos², Rayssa Brenda da Silva Lima², Auriane de Sousa Alencar³.

¹ University Center Unifacid

² Federal University of Piauí

³ State University of Piauí

INTRODUCTION: Meckel's diverticulum (MD) is an anomalous condition of the gastrointestinal system that is very common in the population, being defined as a remnant of the vitelline duct generating a congenital malformation of this system. This anomaly can result in several complications, such as: gastrointestinal bleeding, obstruction or diverticular inflammation, generally caused by an ectopia that causes symptomatic MD, but with age the risk of worsening the clinical condition decreases. **REPORT CASE:** Patient, female, 3 years old, is admitted to the emergency department with a history of severe abdominal pain in the right iliac fossa, bilious vomiting, and stopping the elimination of flatus and feces for 6 days. On physical examination, she presented a regular general condition, hypoactive, afebrile, hypocolored +/4+, dehydrated +++/4+, eupneic on room air, vesicular murmur present bilaterally, distended abdomen, diffusely painful on palpation, with signs of peritonitis, rectal examination indicated an empty rectal ampulla. A zero diet was prescribed, intravenous expansion hydration with 0.9% saline solution, maintenance intravenous hydration with 5% glucose saline, 10% NaCl, 10% KCl and 50% glucose, ondansetron 2 mg and dipyron 500 mg. An abdominal X-ray showed the presence of an air-fluid level, without gas in the rectum, with signs of intestinal obstruction, while an abdominal ultrasound showed diffuse liquid distension of intestinal loops, sometimes with the formation of an anechoic liquid-hypoechoic liquid level. Laparotomy was indicated and abdominal exploration showed the presence of MD causing intestinal obstruction with disproportion of caliber between the small loops. Enterectomy of approximately 3cm of intestinal segment containing MD and enteroanastomosis with separate seromucosal sutures with 5.0 prolene were performed. The patient showed clinical improvement and was discharged after 5 days. **FINAL CONSIDERATIONS:** MD has a prevalence of 0.3-2.9% in the general population and is commonly identified incidentally during surgery. There are few reports in the literature of intestinal obstruction due to MD, which is a rare cause of surgical emergency. It is important to think about the diagnosis of MD in light of conditions that characterize possible complications of the anomaly, such as bleeding, obstruction and diverticulitis, as they generally occur in urgent situations. The therapy is diverticulectomy and/or enterectomy with primary anastomosis in cases of symptoms or complications, which can reduce morbidity and mortality when managed in a timely manner.

25. **EPIDEMIOLOGICAL ANALYSIS OF THE SITUATION OF CARDIOVASCULAR DISEASES IN PIAUÍ, FROM 2019 TO 2022**

Luís Felipe Cardoso Silva¹, João Henrique Morais Pereira da Silva¹, Antonio Vilck Sales de Moraes Souza Crisanto¹, João Victor Ferreira de Sousa¹, Antonio Vinicius Sales de Moraes Souza Crisanto¹.

¹ State University of Piauí

INTRODUCTION: The circulatory system is basically composed of a pump (heart) and a circuit of vessels (arteries, veins, arterioles, venules and capillaries) responsible for transporting O₂ and nutrients. Examples of cardiovascular diseases include hypertensive diseases, ischemic heart diseases, peripheral vascular diseases, cerebrovascular diseases, conduction disorders and cardiac arrhythmias. **OBJECTIVES:** The present work aims to analyze the epidemiological framework regarding the main diseases that affect the circulatory system, considering data on hospitalizations and deaths in the state of Piauí from 2018 to 2022. **METHODS:** Epidemiological study carried out through data collection secondary data in the Hospital Information System of the Unified Health System (SIH/SUS), in which there was no need for approval from the Ethics Committee. Such data correspond to the total number of hospitalizations and deaths in the State of Piauí in each year in the period from 2018 to 2022 related to pathologies of the cardiovascular system. **RESULTS:** During the period analyzed, 62,844 cases of circulatory system diseases were recorded in Piauí. The age group in which the most hospitalizations were reported was 70 to 79 years old (24.1%), followed by 60 to 69 years old (23.1%). The most prevalent pathologies include heart failure with 15,825 cases (25.1%), followed by stroke with 10,327 cases (16.4%). Regarding the evolution of diseases, 4,753 deaths were recorded, with the most prevalent cause being stroke with 1,470 deaths (30.9%). Furthermore, the year 2019 was the year with the highest number of hospitalizations (26.7%) and the year 2022, the year with the highest number of deaths (29.2%). **CONCLUSION:** From the study, it is concluded that heart failure is the biggest cause of hospitalizations for cardiovascular diseases. The age group most affected by this group of diseases is 70 to 79 years old. Furthermore, stroke was the biggest cause of death among these diseases. In the period analyzed, the year 2019 recorded more cases of hospitalizations, and the year 2022 recorded the highest number of deaths.

26. **CASE REPORT: NON-KETOTIC HYPERGLYCINEMIA**

Thalita Ellen Lima da Silva¹, Camila Araújo Nery Oliveira Meneses¹, Wagner Feijó de Oliveira Filho¹, Kélita Vitória Freitas de Sousa², Carlos Eduardo Pitombeira Neres³, Diego Batista de Montalvão Cunha¹.

¹ Unifacid University Center,

² Uninovafapi University Center

INTRODUCTION: Nonketotic hyperglycinemia (NKH) is an inborn error in glycine catabolism caused by mutations in genes that encode proteins from the glycine system. The NKH phenotype is often heterogeneous. Its most common manifestation is the neonatal form, in which the symptomatology manifests within the first days of life.

CASE REPORT: 7-month-old infant, female, born via normal delivery without complications and at term. Uncomplicated prenatal care, gestational age of 39 weeks. Non-consanguineous parents. The newborn's birth weight was 3460g, length 50cm, head circumference 35cm, and Apgar score of 9 at 1 minute and 10 at 5 minutes. Mother's blood type B positive, child and father's blood type O positive. At birth, the newborn exhibited flexion tone and cried. In the first few hours of life, the infant displayed weak sucking, and by the 15th hour of life, did not respond to eye-opening stimuli. On the second day of life, the patient was discharged from the hospital. On the same day, the patient returned to the hospital, as reported by the mother, with anuria. Glucose and saline were administered at the hospital. The patient was then discharged. On the third day of life, the infant exhibited generalized hypotonia and absent sucking. On the same day, the patient was readmitted to the hospital, where a urinary catheterization was performed. Oral sensory-motor stimulation was conducted on the infant with no response. Subsequently, transfer to the Intensive Care Unit (ICU) was recommended. Still on the third day of life, the patient was intubated and experienced a seizure, prompting the initiation of phenobarbital at a loading dose. On the 29th day of life, the patient was diagnosed with nonketotic hyperglycinemia. Afterward, the patient commenced treatment with sodium benzoate at a dosage of 700mg/kg. On the 50th day of life, a tracheostomy was performed. At 2 months of age, the infant was discharged from the ICU, displaying signs of improvement. At 5 months of age, tapering from phenobarbital began, and cannabis was introduced. Currently, the infant is being treated with cannabidiol, levetiracetam, L-Carnitine, Omeprazole, and topiramate. The patient is also on sodium benzoate and Nan Comfort infant formula, maintaining the tracheostomy without mechanical ventilation. **FINAL CONSIDERATIONS:** Case reports, such as the one presented, provide valuable data for the scientific community, extending the range of possibilities for advancing the understanding and treatment of glycine encephalopathy. A better understanding of variations in empirical approaches can assist in identifying new therapeutic strategies.

27. **EPIDEMIOLOGICAL PROFILE OF TUBERCULOSIS CASES ASSOCIATED WITH DIABETES MELLITUS IN THE STATE OF PIAUÍ FROM 2015 TO 2020**

Rommayolle Costa Diniz de Sousa¹, Bruna Beatriz Gomes Bonfim Santos¹, Antonio Marcos Medeiros de Oliveira¹, Isadora Nogueira Pinheiro Castelo Branco¹, Cecília Maria Camelo da Silveira¹ and Julciele Cicera da Silva².

¹ State University of Maranhão,

² Federal University of Piauí

INTRODUCTION: Tuberculosis (TB) is a global health issue and ranks second among the causes of death from infectious diseases worldwide. In this epidemiological scenario, the increasing prevalence of chronic conditions, such as diabetes mellitus (DM), is also a cause for concern. Studies demonstrate that diabetes, due to its immune-weakening effects, poses a threat to the global control of tuberculosis, increasing the overall risk of infection, reinfection, or even death, even after adequate treatment. **OBJECTIVES:** To describe the epidemiological profile of TB cases associated with DM reported in the state of Piauí between 2015 and 2020. **METHODS:** A retrospective epidemiological study was conducted using data extracted from the Piauí Notifiable Diseases Information System, available on the DATASUS platform. All cases of TB associated with diabetes mellitus in the state of Piauí between 2015 and 2020 were included. The variables used included gender, race, age group, education level, clinical form of TB, other comorbidities, and outcomes. **RESULTS:** Within the study period, 478 cases of TB associated with DM were reported in Piauí. The majority of individuals were predominantly male (60.6%), of mixed race (74.4%), aged 40 to 59 years (44.3%), with incomplete primary education (41.2%). The predominant clinical form of TB was pulmonary (89.1%). In terms of other comorbidities, smoking (17.3%) and alcoholism (13.3%) were prevalent. Regarding outcomes, 69.9% of patients were cured of TB, 4.2% died due to TB, 6.7% died from other causes, and 3.3% abandoned treatment. **CONCLUSION:** The analyzed data reveal a profile of TB and DM patients in the state of Piauí from 2015 to 2020, primarily consisting of adult males of mixed race. High rates of cases were also observed in individuals with low education levels or substance dependency. Thus, there is a clear need for health education aimed at lifestyle changes, especially among men in the 40 to 59 age group.

28. **EPIDEMIOLOGICAL PROFILE OF ADMISSIONS FOR MISTREATMENT SYNDROMES IN BRAZIL BETWEEN THE YEARS OF 2018 TO 2022**

Alisson Torres Fontenele Junior¹, Ana Gabriela de Oliveira Manganeli¹, Caio Henrique Carneiro da Cunha Guimarães¹, Francielly Prudencio Carvalho¹, Isadora Gomes Santos de Moura¹ and Luiza Ivete Vieira Batista¹.

¹ State University of Piauí

INTRODUCTION: Maltreatment syndromes are defined as abuse and neglect committed against any age group, including abandonment, sexual violence, physical violence and psychological abuse. Consequently, such occurrences impact the development, dignity and physical and emotional health of victims, who will often require in-hospital care. **OBJECTIVES:** To analyze the epidemiological profile of Hospitalizations for Abuse Syndrome in Brazil between 2018 and 2022. **METHODS:** This is a cross-sectional, retrospective, descriptive epidemiological study, with a quantitative approach, of hospitalizations due to abuse syndrome in Brazil from 2018 to 2022, based on data obtained from the Department of Informatics of the Brazilian Unified Health System (DATASUS), 'SUS Hospital Mortality Information System (SIH/SUS)'. Data analysis was carried out using the following variables: age group, sex, race, region and mortality rate. The results were tabulated in a Microsoft Excel spreadsheet. **RESULTS:** During the period studied, 2,457 hospitalizations due to abuse syndromes were recorded in Brazil, 457 (18.59%) in 2018, 479 (19.49%) in 2019, 428 (17.41%) in 2020, 500 (20.35%) in 2021 and 593 (24.13%) in 2022; with emphasis on the Southeast regions with 961 cases (39.11%), South with 660 (26.86%) and Northeast with 417 (16.97%). Furthermore, the most affected age group was 1-4 years old (24.74%), followed by 5-9 years old (22.87%) and 10-14 years old (20.15%); and the sex that prevailed was female, representing 1,928 of the hospitalizations (78.46%). Furthermore, regarding the nature of the service, urgency stood out with 2,215 (90.15%) cases. The average length of stay was 3.22 and the average mortality rate was 0.41, being the highest in 2020, at 0.95. **CONCLUSION:** It was demonstrated that the incidence of hospitalizations due to of mistreatment in Brazil increased during the period studied, but without major increases from one year to the next. Furthermore, a greater number of cases were observed in the southeast and south regions, requiring urgent care, with the age group of 1-14 years prevailing, especially among females, possibly due to the physical and/or emotional vulnerability of these groups. It is therefore urgent to awaken the scientific community to this topic, as well as to develop prophylactic and effective measures to combat this harmful condition, which minimize possible intra-hospital complications.

29. **VISCERAL LEISHMANIASIS: EPIDEMIOLOGICAL PROFILE OF CASES REPORTED IN THE STATE OF PIAUÍ BETWEEN 2013 AND 2022**

Thaís de Negreiros Neves¹, Livia Vilarinho Santos Barbosa¹, Raí de Moura Ribeiro¹, Ary Andrade Viana¹, Samuel de Castro Campos¹ and Carla Maria de Carvalho Leite¹.

¹Federal University of Piauí

INTRODUCTION: Visceral leishmaniasis (VL) is a zoonotic infectious disease, caused by protozoa of the genus *Leishmania*. The disease constitutes an important public health problem, due to its lethal nature. **OBJECTIVES:** To analyze the epidemiological situation of visceral leishmaniasis in Piauí over a decade. **METHODS:** Ecological time series, retrospective study, with a quantitative approach, using secondary data from the Department of Informatics of the Unified Health System (DATASUS), about VL cases, between the years 2013 and 2022, in the state of Piauí. The variables analyzed were: sex, age group, race, co-infection with Human Immunodeficiency Virus (HIV), area of residence and clinical evolution. Incidence calculations were carried out using the population projection for each year of the decade in question, according to the Brazilian Institute of Geography and Statistics (IBGE). **RESULTS:** In the decade analyzed, 1852 cases of VL were reported. The year 2014 had the highest incidence rate (8.82/100,000 inhabitants), with the lowest being in 2021 (2.7/100,000 inhabitants). In the decade investigated, in terms of sex, there was a predominance of men, with 1286 cases (69.44%). Regarding the age group, there is a higher proportion in people aged between 20 and 39 years old, with 490 cases (26.46%), followed by the group between 01 and 04 years old, with 399 affected (21.54%). In terms of race, there was a predominance of brown individuals, with 1566 cases (84.56%). Regarding coinfection with HIV, 237 (12.8%) were coinfecting. The highest percentage of VL cases, by area of residence, was found in the urban area, with a total of 55.4% notifications, and for 20% of cases, this information was unavailable. Regarding clinical evolution, the percentage of cure (40.93%) was highlighted. In approximately 40.6% of cases, there is no information about the outcome, while 6.53% resulted in death from VL. Among those co-infected with HIV, 8.44% had a fatal outcome. **CONCLUSION:** The results found in this study show the predominance of cases of visceral leishmaniasis in 2014, and, in general, in young, brown men and residents of urban areas. Furthermore, a higher percentage of the disease was cured, with those co-infected with HIV having a higher rate of death from VL compared to those who were not infected. The implementation of VL prevention and control measures is essential to reduce the number of cases and deaths caused by the disease.

30. **PROGRESSIVE SUPRANUCLEAR PALSY WITH PREDOMINANT CORTICOBASAL SYNDROME: CASE REPORT**

Luma Rodrigues da Silva¹, Thaís de Negreiros Neves¹, Kayron Rodrigues Lima¹, Guilherme Victor Antas Cronemberger¹, Sabrina Ruthiele Santos de Carvalho¹ and Kelson James da Silva Almeida¹.

¹Federal University of Piauí

INTRODUCTION: Progressive Supranuclear Palsy (PSP) is a neurodegenerative disease related to the deposition of tau protein in different regions of nervous tissue. The PSP diagnostic criteria comprise 4 functional domains (ocular, postural instability, akinesia and cognitive dysfunction), and allow establishing the variant and degree of diagnostic certainty of PSP. The highlighted case portrays the type of Progressive Supranuclear Palsy with predominant Corticobasal Syndrome (PSP-CSB), which is probable, given the presentation of asymmetric movement disorders and superior cortical changes. **CASE REPORT:** Female patient, 76 years old. At the age of 62, she began to experience slowness and imbalance, with gait instability, which began gradually, and was more intense on the left. She reports an episode of "going senseless" in 2013, without motor tremors and without sphincter release, with subsequent mental confusion. In 2021, she began experiencing agitation, insomnia, delusions and hallucinations. Currently, she presents some functional dependence regarding Basic Activities of Daily Living. The patient had previously used Pramipexole and dispersible Prolopa. Physical examination (PE) revealed facial hypomimia, moderate bradykinesia in the right upper limb (LL), and mild bradykinesia in the left upper limb. We also identified mild plastic rigidity in the right upper limb, more intense asymmetric resting tremor on the right side compared to the left, altered Pull Test, ideomotor and ideational apraxia for gestures with and without objects, and absence of saccades. Patient also reported constipation and mood changes. She has 2 children with mental retardation. As a course of action, Prolopa, Quetiapine were administered and Pramipexole was suspended, due to reports of hallucinations, delirium and insomnia. During the return visit, mild bradykinesia in the right lower limb (LL) and moderate bradykinesia in the left LL and a positive clap test were noted in PE, in addition to other signs identified in the 1st consultation. Risperidone and Quetiapine were suspended, Clozapine was administered and Prolopa was maintained, in addition to the recommendation of motor physiotherapy. **FINAL CONSIDERATIONS:** This case has scientific relevance linked to the rarity of the disease, as well as the presence of apraxia, psychosis, asymmetric tremor and other symptoms characteristic of other atypical parkinsonisms that are not common in PPS. The diagnosis of PPS is still challenging due to the lack of biological markers, requiring an autopsy for a conclusive diagnosis.

31. **MOST PREVALENT CONDITIONS IN DERMATOLOGY IN THE HOSPITAL CONTEXT – AN EPIDEMIOLOGICAL ANALYSIS IN THE BRAZILIAN STATES OF PI, MA AND CE BETWEEN 2018 AND 2022**

João Ricardo Castro Melo¹, Carolinne Beatriz Coutinho Silva¹, Guilherme Augusto Silva de Moraes¹, Ludmilla Figueiredo Vale Fontenelle¹.

¹ Federal University of the Parnaíba Delta

INTRODUCTION: In Dermatology, patients are typically seen in an outpatient setting. However, the importance of dermatological evaluation in hospitals, which changes diagnosis, treatment and outcome is increasingly confirmed. Therefore, it is essential to know the most common skin and subcutaneous tissue diseases in hospitalizations in Piauí and its two neighboring states, to alert doctors from Piauí about common occurrences in their practice.

OBJECTIVES: To analyze the epidemiology of hospitalizations related to dermatological conditions in Piauí, Maranhão, and Ceará, compared to the Brazilian panorama, in the period between 2018 and 2022. **METHODS:** This is an epidemiological, quantitative, and retrospective study carried out using secondary data from the Hospital Information System (SIHSUS) available by DATASUS, related to notifications of hospitalizations diagnosed with skin and subcutaneous tissue diseases in the years 2018 to 2022. The evaluated variables were "frequency", "ICD-10 Chapter 12 Diagnosis" and "State of Hospitalization" (as in Federation State). **RESULTS:** During the period, 172,324 hospitalizations with a diagnosis in chapter 12 of ICD-10 were recorded in the three States (MA, PI, and CE), representing 13.93% of the Brazilian total of 1,236,843. The most prevalent diagnosis was "L98 – Other skin and subcutaneous tissue disorders not classified elsewhere", with 40,158 (23.30%) hospitalizations in the defined region and period – in Brazil this percentage goes to 29.10%, while in CE drops to 17.10%. "Cellulite" appears as the most prevalent specific condition, with 37,225 (21.60%) occurrences in the region (compared to 17.57% in Brazil). Other most common diagnoses in the region and period are "Inferior ulcer not classified elsewhere (L97)", with 24,341 (14.13%) hospitalizations, with a Brazilian prevalence of 11.35%; "Skin abscess, boil and anthrax (L02)", with 10,306 (5.98%) in the region, representing 7.88% in Brazil and "Decubitus ulcer (L89)", with 8,353 (4.85%), being 5.91% in the whole country. **CONCLUSION:** The most prevalent records found are from miscellaneous groups. These classifications show little specificity, but also the need for a better description of the reason for internalization, which reinforces the role of the dermatologist in hospitals. For the physicians, it is important to know these conditions to better prepare for their management.

32. **LARYNGEAL DYSTONIA ASSOCIATED WITH INTENTION TREMOR IN AN ELDERLY PATIENT: CASE REPORT**

Thaís de Negreiros Neves¹, Luma Rodrigues da Silva¹, Kayron Rodrigues Lima¹, Isabel Maria Oliveira Macedo Lima¹, Sabrina Ruthiele Santos de Carvalho¹ and Kelson James da Silva Almeida¹.

¹ Federal University of Piauí

INTRODUCTION: Laryngeal dystonia (LD) is part of a rare group of neurological disorders, with an incidence of up to 35.1 per 100,000 in the general population, characterized by inadequate or excessive contraction of the laryngeal muscles during speech, affecting both the phonation and breathing, being more common in women over 40 years of age. In about a third of cases, focal-onset laryngeal dystonia disseminates. The diagnosis is clinical, involving a detailed clinical history, speech assessment and physical examination. Its clinical management is challenging due to the lack of established diagnostic markers and validated outcome measures, resulting in prolonged diagnostic delays and suboptimal therapies. The use of botulinum toxin is recommended to manage symptoms. **CASE REPORT:** Female patient, 76 years old. She has had tremors for around 5 years, starting in the cephalic region and in both hands, symmetrically, without worsening since then. She reports that the tremor manifests itself when moving to pick up objects or when she is anxious. As a course of action, she was administered primidone until September 2022, which resulted in an improvement in her tremors, which persisted even after discontinuing the medication. The grandmother, father and older sister present a similar picture, starting in old age. On physical examination, dystonic cephalic tremor with laryngeal dystonia was found, slight intention tremor was observed on the left side, and mild on the right side, as well as postural tremor, also more intense on the left side (mild), compared to the right. (discreet). Furthermore, there was global grade IV+ strength and atypical gait, with no reduction in passive arm swing. There was also a hypoactive nausea reflex on the left, uvula deviated to the left, and bilateral grade V sternocleidomastoid strength. The patient also reports pain in the left lower limb, which sometimes starts in the lower back and radiates to the limb, in shock. The diagnostic hypothesis of the case is dystonic tremor, laryngeal dystonia and essential tremor. **FINAL CONSIDERATIONS:** Taking into account everything that has been considered, the relevance of the present case is due to its rarity and the lack of studies in the literature on the pathophysiology and etiology involved in the clinical manifestation of the disease, which directly affects the management and LBP therapy. Therefore, further clarification of the topic is necessary in order to provide a better prognosis for these patients.

33. **DESCRIPTIVE STUDY OF THE EVOLUTION OF SPENDING ON HOSPITAL ADMISSIONS IN DENGUE CASES IN THE STATE OF PIAUÍ FROM 2015 TO 2022**

Antônio Marcos Medeiros de Oliveira¹, Isadora Nogueira Pinheiro Castelo Branco¹, Rommayolle Costa Diniz de Sousa¹, Bruna Beatriz Bonfim Santos¹, Julciele Cícera da Silva².

¹ State University of Maranhão

² Federal University of Piauí

INTRODUCTION: Dengue, transmitted by the *Aedes aegypti* mosquito, is one of the fastest growing arboviruses in Brazil, which promotes an incidence rate of 627.0 cases per 100,000 inhabitants in the country, structuring a problem that needs to be solved. **OBJECTIVE:** To describe the expenses resulting from hospital admissions for dengue cases in the state of Piauí from January 2015 to December 2022. **METHOD:** This is a quantitative and descriptive epidemiological study on government spending on hospital admissions for dengue cases in the state of Piauí from January 2015 to December 2022. The number of hospitalizations, average length of stay, lethality rate, and total expenditures considering professional services, hospital services, and average expenditure per hospitalization are observed. Data collection was carried out through the SUS Hospital Information System (SIH/SUS) found in DataSUS. **RESULTS:** The data collection in question showed 5,882 hospitalizations of patients with dengue, with an average of 3.0 days of stay, 0.2% mortality rate, with an average value of 306.19 reais per hospitalization, in addition to a total expenditure of 1,801,031.30 reais, of which 1,458,972.42 (81%) reais were spent on hospital expenses and 342,058.88 (18.99%) were spent on professional services. **CONCLUSION:** There was a notorious number of hospitalizations due to dengue cases in the State of Piauí, which reflects an alarming government expenditure in the last 8 years. The data collected expose the need to increase strategies related to the prevention of this infection, thus contributing to the reduction of expenses and resolution of this health problem.

34. **USE OF CONTRACEPTION BY INDIGENOUS WOMEN IN THE NORTH OF THE STATE OF PIAUÍ, BRAZIL.**

Josie Haydée Lima Ferreira^{1,2}, Maria Clara da Cunha Mendes Costa¹, Jéssica Lima Barradas¹, Vitória de Jesus as Silva Moraes Costa¹, Jéssica Reis da Silva² and Izane Luísa Xavier Carvalho Andrade¹.

¹ UNIFACID / IDOMED

² State University of Piauí

INTRODUCTION: Historically, indigenous peoples in Brazil face obstacles to enjoying equal rights, including health. In this health context, the problem is even greater for indigenous women, who suffer countless discrimination, inherent to gender and ethnicity, affecting their quality of life, risk exposure, the occurrence of violence and mortality and morbidity rates. Among the various aspects of indigenous women's health, family planning is particularly a challenge, whether for cultural reasons, collective and individual desires, hierarchies between ethnic and gender consciousness, or due to the fragility of Brazilian indigenous health policy. **OBJECTIVES:** To understand the contraceptive methods used by indigenous women living in the north of the state of Piauí. **METHODS:** Qualitative quantitative observational study, carried out in the Nazaré indigenous community, located in the municipality of Lagoa de São Francisco - PI, in which the sample size was determined using the data saturation method, considering women of the Tabajara ethnic group aged over 18 years. Reproductive health information was obtained via face-to-face questionnaire. The data were organized in tabulations in a Microsoft Office Excel spreadsheet and presented in tables and graphs. This study is part of a matrix research approved by the Research Ethics Committee, under CAEE 52778821.5.0000.5214. **RESULTS:** Analysis of the responses of 50 indigenous women revealed that 56% (28) of those interviewed did not use any contraceptive methods. Among the indigenous women who use contraceptive methods (44%), it was observed that 50% (11) of these underwent tubal ligation, 45.5% (10) reported using oral or injectable contraceptives and only 4.5% (1) stated use a female condom. It was also found that 88% of the indigenous women interviewed had children and that 25% of these had 5 or more children. **CONCLUSION:** Given the above, indigenous women from the Nazaré Community still face difficulties in carrying out family planning and that when they have access to contraception they opt for surgical methods, such as tubal ligation. Therefore, it is necessary to increase effective measures aimed at promoting health aimed at indigenous communities, respecting the needs of this historically neglected population.

35. **PENETRATING EYE TRAUMA CAUSED BY A WOODEN FRAGMENT WITHOUT DEEP STRUCTURAL PERFORATIONS: CASE REPORT**

Ary Andrade Viana¹, Guilherme de Sousa Avelino¹, Ingrid Cristina Rêgo Barros¹, João Gabriel Silva Portela¹, Juliana de Souza Lima¹, Regiane Maria Batista Costa¹.

¹Federal University of Piauí

INTRODUCTION: Eye injuries are responsible for a significant demand for ophthalmology services, as they cause substantial functional ocular changes, which can lead to blindness with important personal, social and economic losses. Eye trauma ranges from small abrasion-type injuries to severe extensive perforations, requiring urgent ophthalmological interventions, being responsible for 2.3 million cases of bilateral visual deterioration. **CASE REPORT:** Male patient, 49 years old, initially seen at the Emergency Care Unit on 02/16/2023 complaining of suprapalpebral pain resulting from penetrating trauma in the upper periorbital region of the left eye after an accident, while riding, caused by a wooden object measuring approximately , four centimeters. In this first visit, an attempt was made to remove the foreign body, without success, with subsequent referral, on the same day, to urgent care in specialized care, in the Ophthalmology sector of the Hospital de Urgência de Teresina (HUT). At the time of the second visit, the patient denied tearing and reported slight visual changes and pain in the region of the trauma. On physical examination, the visual acuity of the left eye was 20/25 without correction, extrinsic eye movements without changes in both eyes, isochoric and photoreactive pupils, a fragment of wood embedded in the upper periorbital region, a calm eye, transparent cornea and anterior chamber formed. Given the condition, computed tomography scans of the skull and orbits were requested with concomitant hospitalization for surgical planning. The requested tests showed the presence of the foreign body inside the orbital cavity, however, without nerve or muscle injuries, without penetration into the eyeball or brain and without fractures of the bone structures. Given this scenario elucidated by the CT scans, the chosen treatment was a surgical approach under local anesthesia to remove the foreign body. The unresisting wooden fragment was therefore removed, surgical exploration of the wound, irrigation with saline solution and simple stitch suturing were carried out. **FINAL CONSIDERATIONS:** The most common immediate complication in cases of penetrating eye trauma is low visual acuity. However, the reported case shows a patient who had no serious ophthalmological changes, reporting only suprapalpebral pain and no functional impairment.

36. **DESCRIPTIVE STUDY OF THE EVOLUTION OF SPENDING ON HOSPITAL ADMISSIONS IN DENGUE CASES IN THE STATE OF PIAUÍ FROM 2015 TO 2022**

Antônio Marcos Medeiros de Oliveira¹, Isadora Nogueira Pinheiro Castelo Branco¹, Rommayolle Costa Diniz de Sousa¹, Bruna Beatriz Bonfim Santos¹, Julciele Cícera da Silva

¹ State University of Maranhão

² Federal University of Piauí

INTRODUCTION: Dengue, transmitted by the *Aedes aegypti* mosquito, is one of the fastest growing arboviruses in Brazil, which promotes an incidence rate of 627.0 cases per 100,000 inhabitants in the country, structuring a problem that needs to be solved. **OBJECTIVE:** To describe the expenses resulting from hospital admissions for dengue cases in the state of Piauí from January 2015 to December 2022. **Method:** This is a quantitative and descriptive epidemiological study on government spending on hospital admissions for dengue cases in the state of Piauí from January 2015 to December 2022. The number of hospitalizations, average length of stay, lethality rate, and total expenditures considering professional services, hospital services, and average expenditure per hospitalization are observed. Data collection was carried out through the SUS Hospital Information System (SIH/SUS) found in DataSUS. **RESULTS:** The data collection in question showed 5,882 hospitalizations of patients with dengue, with an average of 3.0 days of stay, 0.2% mortality rate, with an average value of 306.19 reais per hospitalization, in addition to a total expenditure of 1,801,031.30 reais, of which 1,458,972.42 (81%) reais were spent on hospital expenses and 342,058.88 (18.99%) were spent on professional services. **CONCLUSION:** There was a notorious number of hospitalizations due to dengue cases in the State of Piauí, which reflects an alarming government expenditure in the last 8 years. The data collected expose the need to increase strategies related to the prevention of this infection, thus contributing to the reduction of expenses and resolution of this health problem.

37. **ASSOCIATION BETWEEN SYSTEMIC LUPUS ERYTHEMATOSUS AND ANTERIOR CRUCIATE LIGAMENT INJURY: A CASE REPORT**

Monique Melo Fortaleza¹, Felipe Melo Leal² and Rademack Duarte Amorim³.

¹ State University of Piauí

² Federal University of Piauí

³ Getúlio Vargas Hospital

INTRODUCTION: Systemic Lupus Erythematosus (SLE) is an autoimmune disease that involves multiple organs and systems, with musculoskeletal involvement (MSK) being one of the most frequent and earliest causes of the disease, affecting joints, periarticular soft tissues and bones. This condition can be either primary or related to prolonged use of corticosteroids. Despite its high prevalence, this topic has not received enough attention and its radiological forms of presentation are not recognized. **CASE REPORT:** Female, 46 years old, lives in Buriti dos Lopes-PI, housewife. 27 years ago, when she presented with intense edema in lower limbs, she was diagnosed with SLE and began treatment with prednisone. Six years later, she was hospitalized for 3 months at Hospital Getúlio Vargas (HGV), in Teresina-PI, due to an episode of pleural effusion, with the addition of methotrexate and hydroxychloroquine to the therapy, maintained since then. After the described episode, she continued with lupus manifestations restricted to joint and skin involvement, with edema on exertion, joint pain and photosensitivity. After a long period without hospitalization, 5 years ago, she reports a sprain with a bend in her left knee when getting out of a car, with no history of previous trauma, going to Dirceu Arcoverde State Hospital in Parnaíba-PI, where she immobilized the limb with a plaster. After 2 weeks, when the cast was removed, she reported continued distortion with knee flaccidity and limited range of motion (60-80°), undergoing a Magnetic Resonance Imaging (MRI), which revealed a meniscal tear, and underwent open meniscectomy. However, one year after the procedure, symptoms returned, with a new MRI revealing a complete rupture of the left Anterior Cruciate Ligament (ACL). Then, she underwent a ligament reconstruction procedure at HGV, 3 months ago, with resolution of the condition associated with ligament rupture. After surgery, the patient undergoes physiotherapeutic treatment to rehabilitate the knee with gains in strength and mobility. **FINAL CONSIDERATIONS:** Although MSK involvement in SLE is recognized, knee injuries without previous trauma are rarer, especially ACL injuries. It is therefore necessary to expand studies on the exact etiopathogenesis of the process, whether primary or secondary to corticosteroid therapy, as well as its diagnosis through complementary tests. Furthermore, this report draws attention to the prevention of these injuries through early muscle strengthening in patients with lupus.

38. **MACULOPATHY CAUSED BY CHRONIC USE OF HYDROXYCHLOROQUINE: CASE REPORT**

Felipe Augusto Oliveira Dantas¹, Gabriel Soares Bruno

Santos¹, Isabella Lísia Veras Pontes de Oliveira¹, Júlia

Pimentel Santos¹, Regiane Maria Batista Costa¹, Vitor Gomes

Prado¹

¹Federal University of Piauí

INTRODUCTION: The retina is relatively protected against systemically administered drugs due to a highly selective adaptive mechanism that the blood-retinal barrier exerts. However, a high number of drugs have been associated with drug-induced retinopathy. One of the drugs associated with visual loss is hydroxychloroquine, a chloroquine derivative used widely for a variety of autoimmune disorders such as systemic lupus erythematosus. **CASE REPORT:** Male patient, 58 years old, reporting low visual acuity in the left eye, which had been perceived for 1 year. He has a history of systemic arterial hypertension, with use of amlodipine and hydrochlorothiazide, and diagnosed with systemic lupus erythematosus (without medication at the moment). He states that he used hydroxychloroquine for 11 years, stopping it 1 year ago, following advice from an ophthalmologist. Ophthalmological history indicates high myopia and the ophthalmological examination indicated visual acuity of 20/30, intraocular pressure of 15mmHg and 14mmHg. Anterior biomicroscopy revealed, in both eyes, clear conjunctiva, transparent cornea, wide anterior chamber, trophic and photoreactive, phakic iris. Furthermore, the requested retinography allowed the observation, in both eyes, of a pinkish optic disc and delimited edges, 360° neural rim, peripapillary atrophy, tessellated fundus with an area of rarefaction of the parafoveal and perifoveal retinal pigment epithelium in a ring, sparing area central foveal, more evident especially in the left eye. Autofluorescent fundus photography identified para- and perifoveal ring hypoautofluorescence, more evident in the left eye. Visual field examination 10.2 showed a tubular field defect, also more evident in the left eye. Based on the aforementioned information, the diagnostic hypotheses of high myopia and hydroxychloroquine maculopathy were raised. The patient was advised to undergo ophthalmological follow-up every 3-6 months and to maintain the suspension of Hydroxychloroquine while controlling the underlying disease. It is also necessary to explain to the patient the long-term effects of the suspended medication. **FINAL CONSIDERATIONS:** The report presented therefore shows a possible drug-related maculopathy related to the chronic use of hydroxychloroquine. However, it is worth highlighting that the evolution of the case after medication withdrawal is an important factor to be evaluated in the future.

39. **CRYSTALLINE RETINOPATHY: CASE REPORT OF A RARE EYE CONDITION**

Gabriel Mendes Silva¹, Guilherme Moura Lima Portela Santos¹, Linda Cecília Almeida de Barros¹, Joan Eduardo Pereira Farias¹, Paula Leal dos Santos Barros¹, Paulo Aírton Cordeiro de Souza Júnior¹

¹Federal University of Piauí

INTRODUCTION: Crystalline retinopathy is a rare, hereditary eye condition that affects the retina, a light-sensitive layer located at the back of the eye. In this case report, we present the clinical profile and therapeutic approach of a child diagnosed with crystalline retinopathy. Although it is an uncommon condition, reporting cases of crystalline retinopathy is essential to increase knowledge about this disease and assist in early diagnosis and appropriate management of patients. **CASE REPORT:** M.J.L.A.P., male, 4 years old, diagnosed with primary hyperoxaluria type 1, underwent liver and kidney transplantation 2 years ago. During ophthalmological care, biomicroscopy revealed opacity of the posterior capsule in the left eye (OE). Fundoscopy revealed a pink disc, physiological excavation and macular pigmentary changes in both eyes (AO). Visual acuity (VA) examination indicated reduced VA in AO. Therefore, Optical Coherence Tomography (OCT) of the macula and retinography (RETINO) were requested. OCT showed discontinuity of the parafoveal outer retinal layers and irregular, hyperreflective elevations of the retinal pigment epithelium (RPE), while RETINO showed diffuse pigmentary changes and deposition of macular crystals. Diffuse pigmentary changes and RPE elevations suggest RPE hyperplasia, which may be associated with hereditary cancer syndromes, such as familial adenomatous polyposis (FAP), which may predispose to extra-colonic manifestations, including congenital hypertrophy of the retinal pigment epithelium (HCEPR), therefore requiring evaluation of family history and possible genetic counseling. Furthermore, the accumulation of crystals in the retina speaks in favor of crystalline retinopathy as a consequence of the deposition of calcium oxalate crystals arising from type 1 primary hyperoxaluria, which would justify the decrease in VA in both eyes. The diagnosis is included in ICD H35 (other retinal disorders) and the approach was to provide guidance and follow-up over a period of 6 to 12 months with new OCT and RETINO. **FINAL CONSIDERATIONS:** Through the report, the importance of comprehensive ophthalmological evaluation in patients with complex clinical conditions is verified, considering that the present patient has factors predisposing to the development of crystalline retinopathy, such as type 1 primary hyperoxaluria. serious and irreversible conditions, such as blindness.

40. **EPIDEMIOLOGICAL PROFILE FETAL DEATHS FROM UNDEFINED CAUSES, IN PIAUÍ, IN THE PERIOD FROM 2015 TO 2021**

Adria Santos Ramos¹, Alisson Torres Fontenele Junior¹, Francielly Prudencio Carvalho¹, Alberto da Costa Sousa Neto², Illana Jéssica Mauriz Pereira Sá³.

¹Uninovafapi University

²State University of Piauí

³Physiotherapist, Teacher in Biotechnology, Federal University of Piauí-UFPI

INTRODUCTION: Conditions that do not clarify the determinants of death were allocated as ill-defined causes, as well as infectious diseases, and parasitic, conditions originating in the perinatal period, congenital malformation, deformities, and anomalies (CID-10). However, understanding is essential the causes of fetal deaths and identify which ones might not have occurred, applying avoidability classification (Brazilian List of Preventable Causes of Death (LBE) – proposed by Malta et al) and sizing the potential for preventing deaths. **OBJECTIVES:** Assess the number of fetal deaths by causes ill-defined, in Piauí, in the period from 2015 to 2021. **METHODS:** Epidemiological study, retrospective and descriptive, with quantitative approach, from the data obtained in the Information Technology Department of the Unified Health System (DATASUS), carried out using data on fetal deaths for ill-defined causes, in Piauí, in the period from 2015 to 2021, using the variables: frequency, type of birth, incidence per year, sex, cause and place of occurrence. **RESULTS:** They were registered, in the period studied, a frequency of 3.235 cases of fetal deaths in Piauí, of which 1.156 (35,73%) had a cesarean section, 2.056 (63,55%) in vaginal birth and 23 (0,71%) in forceps birth/ignored, distributed in 511 (15,79%) in the year 2015, 449 (13,87%) in 2016, 474 (14,65%) in 2017, 513 (15,79%) in 2018, 445 (13,75%) in 2019, 428 (13,23%) in 2020 and 416 (12,85%) in 2021. Furthermore, it was identified 1659 (51,28%) male, 1.446 (44,69%) female and 130 (4,01%) ignored. As for the causes 3.051 (94,31%) due to conditions of the perinatal period, followed by infectious and parasitic/congenital malformations, deformities and anomalies 184 (5,68%) cases. Furthermore, the place of occurrence with greater predominance are the hospitals with 3.019 (93,32%), and households with 105 (3,23%). **CONCLUSION:** Fetal deaths from ill-defined causes, in Piauí, present a significant number, little fluctuation between the years studied, with higher prevalence in vaginal births and conditions of the perinatal period. This scenario makes it essential to carry out new epidemiological studies to understand the causes of fetal deaths and, consequently, for action planning, especially, preventive.

41. **EPIDEMIOLOGICAL PROFILE OF PEDIATRIC HOSPITALIZATIONS DUE TO MALNUTRITION IN THE NORTHEAST REGION BETWEEN 2018 AND 2022**

Naime Otoni Ribeiro de Oliveira¹; Camilly Vertunes Alves Paulo¹; Taciana Tamires Gomes Araújo¹; Anderson Rodrigues da Silva¹; João Antonio Magalhães Lima Siqueira¹; Raquel Rosa Candebat Vallejo Araujo¹.

¹State University of Maranhão

INTRODUCTION: Malnutrition is a significant socioeconomic indicator, as the nutritional status of a population is directly related to its quality of life. Certain age groups, such as children, and vulnerable population groups are among the most affected by nutritional changes. It is a serious health problem that compromises child development and exacerbates pediatric morbidity and mortality.

OBJECTIVES: To analyze the epidemiological profile of hospital morbidity due to malnutrition in children aged 0 to 14 years in the Northeast region between 2018 and 2022. **METHODS:** Descriptive cross-sectional study, with data collected from the TABNET platform available at the Department of Health Informatics of the Brazilian Unified Health System (DATASUS). We selected the "Hospital Morbidity of the Unified Health System" section, considering hospitalizations between 2018 and 2022 in the Northeast region. The variables analyzed included age group, race/ethnicity, processing year, and deaths. **RESULTS:** In the Northeast region, during the study period, there were 9,390 hospitalizations, with 1,800 cases in 2018, 1,943 in 2019, 1,777 in 2020, and 1,804 in 2021. The year 2022 had the highest number of hospitalizations with 2,066 cases. Among the selected pediatric age groups, the highest number of cases were in children under 1 year old, with 6,238 cases (66.43%), followed by 1-4 years with 1,701 cases (18.11%), 5-9 years with 782 cases (8.32%), and 10-14 years with 669 cases (7.12%). Of the total, only 5,241 hospitalizations had race/ethnicity information available. Brown individuals accounted for the majority of hospitalizations during the period (87.06%). Regarding the number of deaths, 204 cases were reported, with 158 affecting children under 1 year. **CONCLUSION:** The study demonstrated an increase in pediatric hospitalizations due to malnutrition over the analyzed period, with 2022 standing out in the Northeast region. The epidemiological profile was prevalent in children under 1 year old, with a brown race/ethnicity. There was also a significant discrepancy between the number of hospitalizations and the number of recorded deaths. This suggests that, despite the high hospital morbidity due to malnutrition, the Brazilian Unified Health System (SUS) is effectively controlling the worsening of cases and combating mortality. Therefore, it is necessary to strengthen child nutritional monitoring in primary care.

42. **COMPARATIVE ANALYSIS OF THE CLINICAL AND EPIDEMIOLOGICAL PROFILE OF CONFIRMED CASES OF TUBERCULOSIS IN PIAUÍ AND BRAZIL**

Luna Mara Sousa Pinheiro¹, Maria Victória Sá Fonseca Andrade¹, Gabriela Barbosa Saraiva Brito¹, Liliane Maria Soares Martins¹, and Lucas Moreira Rocha²

¹ State University of Piauí

² UniFacid Wyden University Center

INTRODUCTION: Tuberculosis (TB) is an infectious disease whose etiological agent is *Mycobacterium tuberculosis* of the MT Complex, known as Koch's Bacillus. The World Health Organization (WHO) revealed a significant increase in TB cases in Brazil in recent years. To analyze the aggravating factors for the development of tuberculosis, in order to establish effective measures for its control in the face of this serious public health problem. **OBJECTIVES:** To compare the epidemiological profile of confirmed and reported cases of Tuberculosis in Piauí and Brazil from 2018 to 2022. **METHODS:** Epidemiological, descriptive and retrospective study with data referring to new cases of Tuberculosis in Piauí and Brazil, from January 2018 to December 2022. The data were obtained from the Notifiable Diseases Information System (SINAN) and the variables - sex, age group, form of development and deaths - were selected. The Microsoft Excel program was used for data tabulation and analysis. **RESULTS:** It was observed that, in Brazil, the year 2022 revealed the highest number of cases, with 101,806 records (21.6%), and 2020, the lowest, with 86,414 (18.3%), and in Piauí, the same trend was observed, with 895 cases (21.3%) in 2022, and 754 (17.9%) in 2020. The most prevalent sex was male, both in Brazil and in Piauí, in all cases and in all years analyzed. The age group of 25 to 34 years old had the highest incidence in Brazil, with 110,493 (23.4%) cases, while in Piauí, the range from 35 to 44 years old predominated, with 818 (19.5%). Regarding the form of development, pulmonary was superior to extrapulmonary throughout the analyzed period, with the smallest difference between the two forms in the territories observed in 2020, with 516 cases of discrepancy in the state and 63,000 in the country. Accordingly, the data revealed 2021 as the year with the highest occurrence of TB deaths in Brazil and Piauí, with 3960 (21.6%) and 56 (27.5%) deaths, respectively. The state of Piauí represents, from 2018 to 2022, 1.1% of the number of national deaths. **CONCLUSION:** Given the results, it is concluded that all variables examined were equivalent between Piauí and Brazil, with the exception of age group. The number of TB cases, from 2018 to 2022, showed an increase in both areas, which corroborates the need for continuous evaluation of indicators for disease control.

43. **EPIDEMIOLOGICAL PROFILE OF PATIENTS HOSPITALIZED FOR NON-HODGKIN'S LYMPHOMA IN THE STATE OF PIAUÍ**

Maria Victória Sá Fonseca Andrade¹, Luna Mara Sousa Pinheiro¹, Gabriela Barbosa Saraiva Brito¹, Liliane Maria Soares Martins¹, and Lucas Moreira Rocha².

¹ State University of Piauí

² UniFacid Wyden University Center

INTRODUCTION: Non-Hodgkin's Lymphoma (NHL) is a primary neoplasm originating in cells of the lymphoid tissue, which manifests itself in lymph nodes, oropharynx, spleen, liver, bone marrow and lungs. NHL is the most common histological type among lymphomas, representing the highest incidence of cancer derived from lymphocytes in children in Brazil. According to data provided by the National Cancer Institute (INCA in Brazil), cases of NHL have doubled in the last 25 years, revealing the importance of investigating factors for the development of the disease and, thus, establishing measures for better clinical and therapeutic management of cases.

OBJECTIVES: To analyze the epidemiological profile of patients hospitalized for non-Hodgkin's Lymphoma in the state of Piauí from 2013 to 2022. **METHODS:** This is an epidemiological, descriptive and retrospective study using data relating to hospitalizations for NHL that occurred in Piauí, from January 2013 to December 2022. The data were obtained from the Hospital Information System (SIH/SUS) and the variables: sex, age group, deaths and mortality rate were observed. The Microsoft Excel program was used for data tabulation and analysis. **RESULTS:** It was found that 2013 had the highest occurrence of hospitalizations, with 308 records (13.2%), and 2017, the lowest, with 159 (6.8%). Throughout the period, the majority of patients hospitalized for NHL were male, with 1470 hospitalizations (63.03%), while women represented 862 (36.97%) cases. Concerning the age group, the highest number of hospitalizations was associated with patients between 60 and 69 years old, with 414 cases (17.75%), and the lowest, with children under 1 year old, with 10 (0.42%). Furthermore, the most significant mortality rate, of 16.74 deaths per total hospitalization, was found in 2016 with 38 deaths, and the lowest, of 7.35, in 2021 with 15 deaths. **CONCLUSION:** It was observed that following the expected objective, it was concluded that hospitalizations for NHL show a continuous trend over the years, with little or no reduction in cases in most of the analyzed period. Furthermore, the prevalence of men and elderly aged 60 to 69 years old was invariably observed among patients and the mortality rate had high rates in relation to other types of cancer. Therefore, enriching the literature on the topic is essential for a better understanding of NHL cases and for the diagnosis to be as early as possible.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

**ABSTRACTS OF THE 2025
IJMS WORLD
CONFERENCE OF
MEDICAL STUDENT
RESEARCH**

IJMS

**INTERNATIONAL JOURNAL *of*
MEDICAL STUDENTS**

Abstracts of the 2025 IJMS World Conference of Medical Student Research

Oral Presentations Session

1ST PLACE FOR HIGHEST SCORE DURING THE ABSTRACT REVISION PROCESS FOR ORIGINAL RESEARCH

ORIGINAL RESEARCH

01. **Ease of Nasogastric Intubation using a Frozen Nasogastric Tube by a Novice Intern in Anaesthetized, Intubated Adult Patients. A Randomized, Controlled Parallel Assignment Study**

Madhuri Dommaraju¹, Shameem S¹, Aloka Samantaray¹

¹ Departamento de Anestesiología y Cuidados Críticos
Instituto de Ciencias Médicas Sri Venkateswara

<https://www.youtube.com/watch?v=hJICJ1w8oM&list=PLhgNq3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=591s>

Background: Frozen nasogastric tube insertion has a higher first attempt success rate compared to normal nasogastric tube insertion in many previous clinical trials. However, the insertion in these studies were done by an expert or the familiarity with nasogastric intubation is not commented about. Success rate of the skilled techniques differ based on the expertise level. We observed that the primary contact physician to be the first responder to nasogastric intubation call in majority of the hospitals is a novice intern.

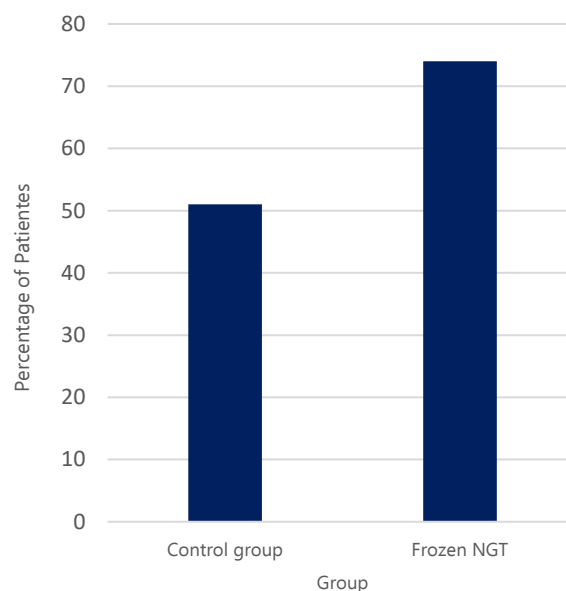
AIM: Our study aims to determine the success rate and associated complications when a novice intern attempt to introduce a frozen or a conventional nasogastric tube under supervision.

Methods: A total of 200 anesthetized, tracheally intubated patients were randomized to receive either a frozen nasogastric tube (n=100) or a normal nasogastric tube (n=100) as a part of routine care. The first attempt success, overall success, duration of insertion, number of attempts and complications were noted.

Results: Frozen nasogastric tube group had higher first attempt success (74 versus 51) and overall success (82 versus 57). It also had fewer attempts for successful nasogastric tube insertion as well as lesser time for the successful procedure (35.8 s versus 42.1 s). Overall complications were fewer with Frozen nasogastric tube (34 versus 61) compared to conventional nasogastric tube except bleeding (21 in both) and kinking (5 and 1).

Conclusion: Our study demonstrated that in the hand of novice intern a frozen nasogastric tube results in higher first attempt success rate, overall success rate, reduced number of attempts, reduced coiling and shorten intubation time with a comparable mucosal bleeding in comparison to conventional nasogastric tube intubation.

Figure 1. Comparison of First Attempt Success Between the Groups



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

**2ND PLACE FOR HIGHEST SCORE DURING THE
ABSTRACT REVISION PROCESS FOR ORIGINAL
RESEARCH****ORIGINAL RESEARCH****02. Evaluation of Anxiolytic Effect of Pantoprazole on Swiss Albino Mice – An Experimental Study**Farheen Kooliyattayil¹, Shwetha Oommen¹, Jacob Abraham¹¹ Pondicherry Institute of Medical Sciences, Puducherry, India

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=6&t=3532s>

Background: Anxiety disorders, affecting over 7% of the global population, are among the most common psychiatric disorders significantly impairing daily life, productivity, and social functioning. Current treatments, such as SSRIs and benzodiazepines, provide only partial relief and are often limited by side effects including sedation, sexual dysfunction, and dependence. This has created a pressing need for safer and more effective therapeutic options. Pantoprazole, a commonly used proton pump inhibitor, has demonstrated neuroprotective and anti-inflammatory properties in preclinical studies. These findings raise the possibility that pantoprazole may also exert anxiolytic effects, which have not yet been systematically explored.

Methods: Thirty female Swiss albino mice were divided into five groups, each consisting of 6 animals each- control (saline), standard (diazepam 5 mg/kg i.p.), and pantoprazole-treated groups (10, 15, 20 mg/kg orally). Drugs were administered daily for 14 days. Mice were then assessed using the Elevated Plus Maze (EPM) which measures time spent and entries into open arms, and Actophotometer which records locomotor activity to determine whether pantoprazole produced sedative effects.

Results: Pantoprazole treatment significantly reduced anxiety-like behavior in a dose-dependent manner. In the EPM, mice treated with pantoprazole spent more time and made more entries into open arms compared to controls, with the 20 mg/kg dose producing the strongest effect ($p < 0.001$), comparable to diazepam. Importantly, locomotor activity remained unchanged across pantoprazole groups, indicating that its anxiolytic effect was not confounded by sedation. Statistical analysis confirmed that the 20 mg/kg dose of pantoprazole produced significant improvements in anxiety-related measures without altering overall activity levels.

Conclusion: This experimental study provides the first evidence that pantoprazole, at higher doses, exerts significant anxiolytic effects in Swiss albino mice. Unlike diazepam, pantoprazole did not reduce locomotor activity, suggesting a favorable safety profile without sedative side effects. These results highlight pantoprazole's potential as a novel or adjunctive therapeutic agent for anxiety disorders. While further mechanistic studies and clinical trials are required, the findings

open an exciting avenue for repurposing an established and well-tolerated drug in the management of anxiety.

Table 1. Effects of Pantoprazole on Anxiety-Like Behavior in the Elevated Plus Maze and Locomotor Activity

Group	EPM: Time in Open Arms (sec)	EPM: Open Arm Entries	Locomotor Activity (Counts)
Control (Saline)	89.00 ± 14.07	3.67 ± 1.15	241.67 ± 35.13
Diazepam 5 mg/kg (i.p.)	213.17 ± 29.93	10.33 ± 2.08	295.17 ± 28.07**
Pantoprazole 10 mg/kg (p.o.)	121.83 ± 16.53	5.83 ± 1.47*	228.33 ± 25.75 (ns)
Pantoprazole 15 mg/kg (p.o.)	131.67 ± 13.79	7.50 ± 1.87	216.17 ± 28.28 (ns)
Pantoprazole 20 mg/kg (p.o.)	155.67 ± 22.44	8.17 ± 1.60	225.83 ± 29.45 (ns)

Legend: Values are expressed as mean ± SEM (n = 6 per group). Statistical significance was analyzed against control group: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; ns = not significant.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)



3RD PLACE FOR HIGHEST SCORE DURING THE ABSTRACT REVISION PROCESS FOR ORIGINAL RESEARCH (4 WAY TIE!!!)

ORIGINAL RESEARCH

03. Assessing the Precision of AI-Generated Medical Answers: An Evaluation of LLaMA-3 Powered Meta AI

Areeba Khan¹, Muhammad Talha Khan²

¹Liaquat National Hospital and Medical College, National Stadium Road, Karachi, 74800, Sindh, Pakistan

²Dow University of Health Sciences, Baba-e-Urdu Road, Karachi, 74200, Sindh, Pakistan

 https://www.youtube.com/watch?v=hJlCj1w8oM&list=P_LhqNq3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=1526s

Background & Objective: Meta AI is being used frequently by medical students to clear the queries or to solve the questions, due to its easy availability. The purpose of this study is to assess the correctness of the Meta AI-generated answers to medical questions, and the reproducibility of the results.

Method: The study employs an Evaluation Research Design aimed to assess the quality and effectiveness of Meta AI. A total of 240 MCQs were included in the questionnaire, 30 MCQs from each subject. Out of these, 108 were case-based (Category: A), whereas 132 were fact-based (Category: B). Meta AI was re-queried with the previously failed questions 14 days later. Results were analyzed manually and accuracies were evaluated using IBM SPSS version 27.

Results: In initial analysis, Meta AI correctly answered 187 out of 240 questions (average accuracy = 77.9%). The most accurately responded category was Category-A with an average accuracy of 82.4%. The accuracy of Category-B was noted to be 74.2%. In re-scored analysis, Meta AI reproduced correct answers for only 12 out of 53 previously failed questions leading to an average reproducibility of 22.6%. The accuracy of Category A was 47.3% and that of Category B was 8.8%.

Conclusion: The integration of AI in the field of medicine is advancing rapidly, and models like Meta AI represent significant strides in making medical information more accessible and accurate. Despite these promising results, there are notable limitations, such as the scope of questions, the subjects covered, and potential selection biases.

Table 1. Overview of Total and Categorical Validation from Initial Analysis

Subject	Correct Answers	Wrong Answers	Category – A n (total)	Category – B n (total)	Accuracy %
Anatomy	20	10	1 (8)	9 (22)	66.6
Biochemistry	26	4	3 (16)	1 (14)	86.6
Community Medicine	20	10	5 (10)	5 (20)	66.6
Forensic Medicine	18	12	0 (0)	12 (30)	60.0
Microbiology	27	3	1 (16)	2 (14)	90.0
Pathology	29	1	1 (29)	0 (1)	96.6
Pharmacology	26	4	3 (15)	1 (15)	86.6
Physiology	21	9	5 (14)	4 (16)	70.0
Total =	187	53	19 (108)	34 (132)	77.9

Table 2. Overview of Total and Categorical Validation from Re-scored Analysis

Subject	Total Questions*	Correct Answers	Wrong Answers	Category – A n (total)	Category – B n (total)	Accuracy %
Anatomy	10	1	9	0 (1)	9 (9)	10.0
Biochemistry	4	1	3	2 (3)	1 (1)	25.0
Community Medicine	10	3	7	3 (5)	4 (5)	30.0
Forensic Medicine	12	1	11	0 (0)	11 (12)	8.3
Microbiology	3	2	1	0 (1)	1 (2)	66.6
Pathology	1	0	1	1 (1)	0 (0)	0.0
Pharmacology	4	3	1	0 (3)	1 (1)	75.0
Physiology	9	1	8	4 (5)	4 (4)	11.1
Total =	53	12	41	10 (19)	31 (34)	22.6

Legend: Total questions refer to the questions that were answered incorrectly in first (initial) attempt

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

3RD PLACE FOR HIGHEST SCORE DURING THE ABSTRACT REVISION PROCESS FOR ORIGINAL RESEARCH (4 WAY TIE!!!)

ORIGINAL RESEARCH

04. National Trends Reveal Hypertension as the Dominant Driver of Cardiovascular Readmissions

Kyle E. Thurmann¹, Trisha G. Mukherjee¹, Joseph G. Dantin²,
Paul T. Kang¹, Michael D. White³

²Rocky Vista University College of Osteopathic Medicine,
Parker, USA

³Valleywise Health Medical Center, Phoenix, USA.



https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=58&t=17759s

Introduction: Cardiovascular (CV) hospital readmissions significantly burden the U.S. healthcare system, particularly among patients with heart failure. While previous studies have evaluated all-cause readmission, there is limited understanding of the specific CV diagnoses responsible for short- and long-term hospital returns. This study aimed to identify the leading CV-specific diagnoses contributing to 30-day and 1-year readmissions following an index hospitalization for heart failure to inform targeted interventions and reduce repeat hospitalizations.

Methods: We conducted a retrospective cohort analysis using the Nationwide Readmissions Database (NRD) from 2016 to 2022. A total of 31,886,859 weighted hospitalizations were included. Adult patients (≥ 18 years) admitted with a primary diagnosis of heart failure were included. The primary outcome was CV-specific readmission within 30 days and 1 year, based on ICD-10 codes for heart failure/pulmonary edema, hypertension and hypertensive crisis, myocardial infarction, arrhythmias/conduction disorders, stroke, pulmonary circulation disorders, and venous thromboembolism. Survey-weighted descriptive statistics, stratified by 30-day and 1-year CV-specific readmission status, identified leading diagnoses. Adjusted models accounted for demographics, comorbidity burden (Charlson Comorbidity Index), and hospital characteristics. Chi-square tests and phi-coefficients (ϕ) quantified associations, with statistical significance set at $p < 0.001$.

Results: Among patients initially hospitalized for heart failure, hypertension or hypertensive crisis accounted for the majority of CV-specific readmissions at both 30 days (64.8%) and 1 year (65.1%). Recurrent heart failure or pulmonary edema was the second most common cause, followed by arrhythmias, acute myocardial infarction, and stroke. All comparisons versus hypertension or hypertensive crisis were statistically significant ($p < 0.001$; $\phi = 0.53$ –0.69). These diagnostic patterns remained consistent over time.

Conclusion: Hypertension-related complications and recurrent decompensated heart failure are the predominant causes of early and late CV-specific readmissions. These findings emphasize the need for

robust post-discharge blood pressure control and longitudinal heart failure management. By identifying high-yield targets for intervention, this study supports the development of more effective care models aimed at reducing the CV readmission burden in this vulnerable population.

Table 1. Thirty-Day and One-Year Readmission Rates Across Cardiovascular Conditions Compared with Hypertension

	30-Day Readmission				
	% (N)	SE	$\chi^2(1)$ vs. HTN	P-values vs. HTN	ϕ -coefficient vs. HTN
Acute Myocardial Infarction	5.90 (1,881,325)	0.024	24,202,174	< 0.001	0.62
Arrhythmias / Conduction	9.24 (2,946,346)	0.030	21,108,975	< 0.001	0.58
Heart Failure / Pulmonary Edema	12.90 (4,113,504)	0.035	18,076,867	< 0.001	0.53
Hypertension / Hypertensive Crisis (HTN)	64.80 (20,662,685)	0.049			
Pulmonary Circulation	0.62 (197,699)	0.008	29,836,652	< 0.001	0.68
Stroke / Transient Ischemic Attack	5.61 (1,788,853)	0.024	24,486,831	< 0.001	0.62
Venous Thromboembolism	0.84 (267,850)	0.009	29,581,492	< 0.001	0.68
	1-Year Readmission				
	% (N)	SE	$\chi^2(1)$ vs. HTN	P-values vs. HTN	ϕ -coefficient vs. HTN
Acute Myocardial Infarction	6.37 (2,031,193)	0.017	23,946,025	< 0.001	0.61
Arrhythmias / Conduction	8.79 (2,802,855)	0.020	21,700,892	< 0.001	0.58
Heart Failure / Pulmonary Edema	12.10 (3,858,310)	0.023	18,896,344	< 0.001	0.54
Hypertension / Hypertensive Crisis	65.10 (20,758,345)	0.034			
Pulmonary Circulation	0.61 (194,510)	0.006	30,057,395	< 0.001	0.69
Stroke / Transient Ischemic Attack	6.14 (1,957,853)	0.017	24,168,617	< 0.001	0.62
Venous Thromboembolism	0.79 (251,906)	0.006	29,848,196	< 0.001	0.68

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



ORIGINAL RESEARCH

05. Sleep Solutions or Sleepless Nights? Adverse Events in Mandibular Adjustment Devices and Hypoglossal Nerve Stimulator Treatment of Obstructive Sleep Apnea

Jacob Bauer¹, Chloe Carrington¹, Sana Khan²

¹ The University of Queensland Medical School, Brisbane, Australia

² The University of Texas Southwestern Medical School, Dallas, United States of America

<https://www.youtube.com/watch?v=4rJ3DHWeKR8&list=PLhqNg3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=6&t=1020s>

Background: Novel therapies for patients with obstructive sleep apnea (OSA) are gaining popularity as many turn away from traditional continuous positive airway pressure (CPAP) treatment. This study aims to analyze and compare the adverse events (AEs) associated with two alternative therapies to CPAP, mandibular adjustment devices (MADs) and hypoglossal nerve stimulators (HGNs).

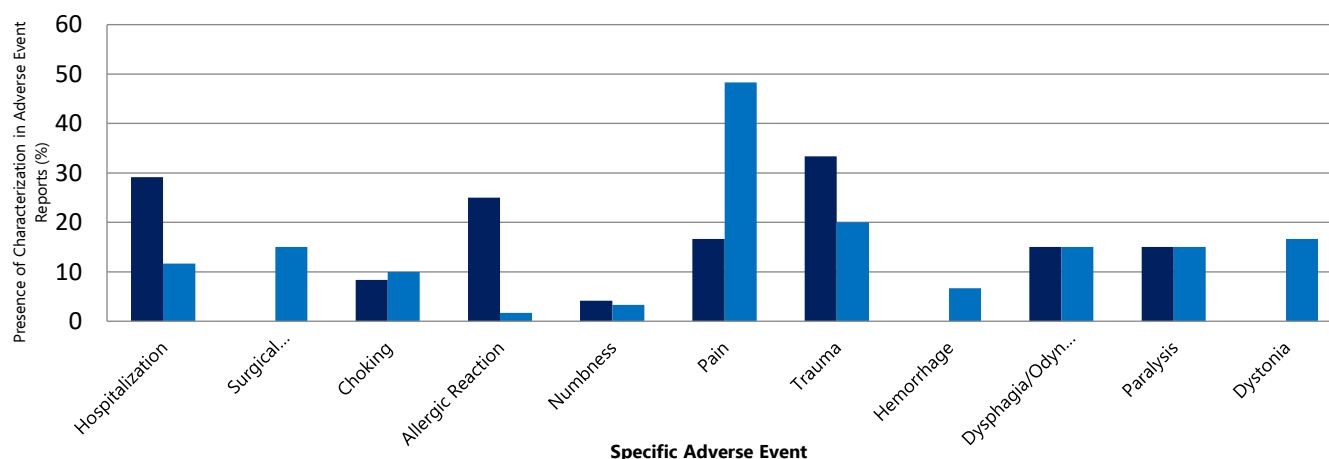
Methods: A retrospective database analysis was conducted of the adverse event (AE) reports extracted from The Food and Drug Administration's Manufacturer and User Facility Device Experience (MAUDE) database. Devices included MADs (SomnoMed Herbst Advance, Sydney, Australia, product codes DYJ, LRK, ECN, and EJF) and HGNs (Inspire Implant, Golden Valley, Minnesota, USA, product code MNQ) for all years reported. Duplicate entries and reports related to device malfunction were excluded. AEs were analyzed for severity of the adverse event and classified using the Clavien-Dindo scale. AEs were classified based on the severity of harm, type of harm

(Allergic Reaction, Choking, Numbness, Pain, Trauma, Paralysis, Dystonia, Hemorrhage, Dysphagia/Odynophagia), and patient outcomes (Hospitalization, Surgical Management).

Results: A total of 24 MADs and 60 HGNs met the inclusion criteria for analysis. Trauma was the most frequently reported AE for MADs (n=8, 33.333%) while pain was most frequently reported for HGNs (n=29, 48.333%). Allergic reactions were significantly more prevalent in MADs compared to HGNs (n=6, 25.000% vs n=1, 1.667%, p=0.002). On the other hand, pain was significantly more prevalent with the use of HGNs compared to MADs (n=4, 16.667% vs n=29, 48.33%, p=0.012). The mean severity of the AE was higher in HGNs compared to MADs (3.000 vs 2.375, p=0.005) indicating a higher level of intervention was required and increased risk of life-threatening outcomes. No statistically significant difference in association was observed between MADs and HGNs for hospitalization, surgical management, choking, numbness, trauma, paralysis, dystonia, hemorrhage, dysphagia/odynophagia. Several outcomes and AE types approached statistical significance but did not meet the threshold for significance (p<0.05).

Conclusion: Mandibular adjustment devices and hypoglossal nerve stimulators have distinct differences in their adverse event profile. Hypoglossal nerve stimulators demonstrate higher severity burden and association with pain while mandibular adjustment devices showed higher association with allergic reactions. Given that both mandibular adjustment devices and hypoglossal nerve stimulators have the capacity to pose significant harm to patients, comprehensive investigation is needed to identify the causes and risk factors for complications to advance patient safety. Additionally, novel treatments for obstructive sleep apnea are needed to meet the increasing demand for alternatives to CPAP.

Figure 1. Comparison of Obstructive Sleep Apnea Device-Associated Adverse Event Reports



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



3RD PLACE FOR HIGHEST SCORE DURING THE ABSTRACT REVISION PROCESS FOR ORIGINAL RESEARCH.

ORIGINAL RESEARCH

06. Exploring Careers in Healthcare & Onward (ECHO): A Community Outreach Program to Promote Healthcare Career Interest in K-8 Students Surrounding the CU Anschutz Medical Campus

Ariel Davydov¹, Rebecca Altshuler¹, Zoe Van De Voorde², Aimee Pugh Bernard³

¹ Third-Year Medical Student. University of Colorado Anschutz School of Medicine

² CCRP. University of Colorado Anschutz School of Medicine, Aurora, USA

³ PhD. University of Colorado Anschutz School of Medicine, Aurora, USA

<https://www.youtube.com/watch?v=4rJ3DHWekRs&list=PLhQNg3xJClbaf00Y5bvBcgMmXpgzJxd44&index=6&t=1012s>

Background: Early exploration can strongly influence children's career development. Past research suggests that children of low socioeconomic status (SES) have a relative lack of exposure to the healthcare environment, which has been adversely associated with healthcare career interest. Many have examined the importance of promoting early interest in healthcare careers, particularly as a strategy to address shortages of healthcare professionals practicing in low socioeconomic areas. While most research examines career interventions in teenage adolescents, there is a relative lack of such interventions geared towards the elementary and middle-aged population. Our community outreach program is designed to introduce basic physiological concepts and explore careers in healthcare through hands-on experiments. The aim is to increase exposure and interest in healthcare careers in elementary- and middle-aged students.

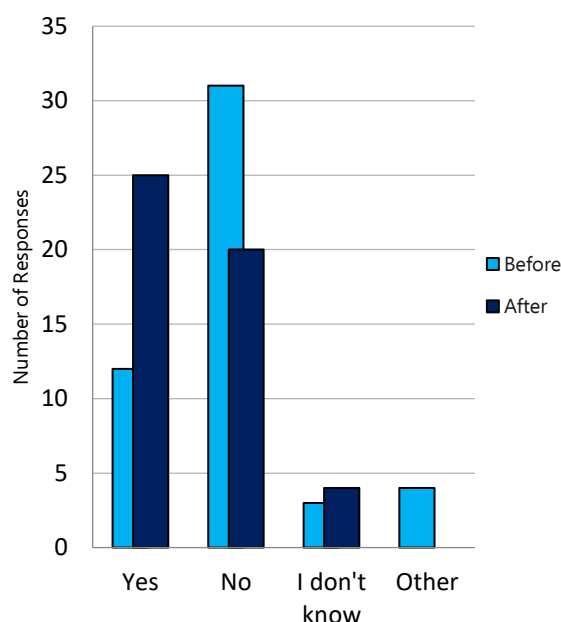
Methods: From December 2024 to October 2025, ECHO organized four career fairs at libraries and elementary schools in Aurora County. Participants were recruited through advertising at partnering schools and libraries, most of which have a large population of students who qualify for free or reduced-price lunches. The event offered four activities: "Build Your Own Stethoscope" (Cardiology), "Learn About Lungs" (Pulmonology), "Make a Surgeon's Bracelet" (Surgery), and "All About Reflexes" (Neurology). Each activity was led by 2-4 volunteer medical students or physicians from the CU Anschutz medical campus. Following completion of the fair, participants completed anonymous post-event surveys that evaluated interest in the activities offered and medical professions before and after the career fair.

Results: Between December 2024 and October 2025, 71 elementary and middle school students participated and completed post-event surveys at three ECHO career fairs. There was a 175% increase in "Yes" responses to the question "I am interested in a career where I grow

up to be a doctor" following the event. This increase in reported healthcare career interest was statistically significant ($p=0.0045$). Relative popularity of activities followed the same pattern as reported interest in specific careers in medicine, with the surgery activity and profession being the most popular activity table and career, followed by cardiology, neurology, and pulmonology. The most frequently cited reason for why a favorite activity was chosen was "The activity was the most fun."

Conclusions: Our post-survey results demonstrate a significant increase in healthcare career interest following completion of the ECHO career fair curriculum. By offering opportunities for students surrounding the CU Anschutz medical campus to engage in healthcare career-oriented learning experiences, ECHO can empower youth to pursue careers in healthcare in their professional futures.

Figure 1. Healthcare Career Interest Before vs After the Career Intervention.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

07. Sleep Quality in First- to Third-Year Medical Students at Universidad de San Carlos de Guatemala: Prevalence and Associations with Daytime Sleepiness and Perceived Stress

Victor Rivero¹, Ana Palomo¹

¹ Fourth-year Medical Student. Universidad de San Carlos de Guatemala. Guatemala City, Guatemala

▶ <https://www.youtube.com/watch?v=hJicJ1w8oM&list=PLhQNg3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=10563s>

Background: Sleep quality is fundamental for learning, emotional regulation, and long-term health. Medical students often face heavy workloads and irregular schedules that can disrupt sleep and increase stress and daytime sleepiness. Based on our literature search, we found no previous reports examining sleep quality and its associations with daytime sleepiness and perceived stress among Guatemalan medical students; therefore, this study represents an initial contribution to this field. Establishing the magnitude of sleep problems in this context is essential to guide student well-being initiatives and institutional policies.

Aim: To determine the prevalence of poor sleep quality among first- to third-year medical students at the Universidad de San Carlos de Guatemala and to evaluate its association with daytime sleepiness and perceived stress.

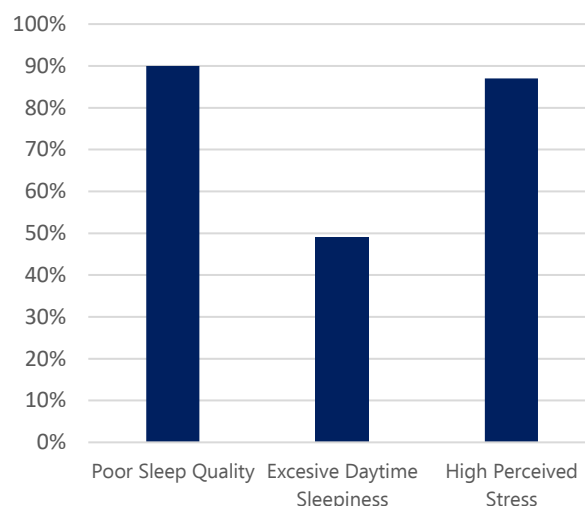
Methods: We conducted a cross-sectional survey of first- to third-year medical students at the Universidad de San Carlos de Guatemala during June-July 2024. Participants filled out an online questionnaire that included the Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), and the Spanish Perceived Stress Scale (EEP). Poor sleep was defined as PSQI > 5. Demographic data included sex, age, and academic year. Categorical variables were compared with chi-square tests, and associations among PSQI, ESS, and EEP scores were assessed with Spearman correlations. Analyses were performed in R with $\alpha = 0.05$.

Results: A total of 100 students participated (mean age 21.7 ± 1.6 years; 61% women), who reported an average nightly sleep duration of 4.9 ± 1.05 hours (mode = 5 hours) over the previous month. The mean PSQI score was 9.2 ± 2.8 , with 90.0% (95% CI 83.5–94.6) classified as having poor sleep quality (PSQI > 5). Excessive daytime sleepiness (ESS ≥ 10) was found in 49% of students (mean ESS 8.8 ± 3.6). High perceived stress was present in 87% of participants, with a mean score 32.1 ± 6.8 which corresponds to the high-stress category (27–40) on the 0–56 PSS/EEP scale. Poor sleep was not significantly associated with sex ($\chi^2 = 0.17$, $p = 0.68$) or academic year ($\chi^2 = 3.33$, $p = 0.19$). PSQI scores correlated positively with daytime sleepiness ($p = 0.31$, $p = 0.0017$) and perceived stress ($p = 0.31$, $p = 0.0020$).

Conclusion: Poor sleep quality is highly prevalent among early-year medical students at the Universidad de San Carlos de Guatemala and

is associated with greater daytime sleepiness and perceived stress. These findings point to the need for both institutional and individual interventions—such as sleep-hygiene education, stress-management programs, and structural measures to reduce chronic sleep restriction—to help protect students' health and academic performance.

Figure 1. Percentage of Students.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

08. **Mobile Phone Use and Hand Grip and Pinch Strength in the SCAMP Study**

Rachel B. Smith,^{1,2,3} Lan Cheng,^{1,2,3} Catherine James,^{1,4} Chen Shen,^{1,2,3} Mireille B. Toledano,^{1,2,3}

¹. Mohn Centre for Children's Health and Wellbeing, School of Public Health, Imperial College London, UK

². National Institute for Health Research Health Protection Research Unit in Radiation Threats and Hazards, Imperial College London, UK

³. MRC Centre for Environment and Health, Department of Epidemiology and Biostatistics, School of Public Health, Imperial College London, UK

⁴. Imperial School of Medicine

▶ https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xjClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=13550s

Background: Use of smartphones demands small, repetitive movements of the thumb and digits on small screens with prolonged hand grip and awkward wrist movement, which may result in fatigue, discomfort, weakness or musculoskeletal impairment. The relationship between phone use and grip and pinch strength in adolescents is poorly understood. Existing research is limited to small, cross-sectional studies predominantly in young adults with little adjustment for confounders, limiting causal inference. Yet hand and wrist injuries pose a huge economic burden to the NHS, costing c£1.3 billion annually with an average 2.8 days of workdays lost. High quality, longitudinal research with appropriate adjustment of confounders is required to resolve this research question, given the high levels of smartphone use in UK adolescents.

Methods: The aim of this study is to investigate the longitudinal association between smartphone use and hand grip and pinch strength, and to explore if any observed associations differ between dominant and non-dominant hands, or between biological sexes, in the Study of Cognition, Adolescents and Mobile Phones (SCAMP), a prospective school-based cohort in Greater London, UK. 647 SCAMP participants with baseline (11-12 years) and follow-up (13-15 years) data were included in the analysis. Hand grip strength was measured for both hands, using standardised technique, with a hand-held Jamar dynamometer (kg), and tip pinch, key pinch and palmar pinch with a Jamar pinch gauge (kg). Mobile phone use variables were daily duration of calls, daily duration of social network use, daily duration of internet use, daily frequency of text messaging and daily frequency of instant messaging. Self-reporting via questionnaire at baseline and follow-up were undertaken. Analyses were adjusted a priori for potential confounders (age, sex, socioeconomic status, ethnicity, other device use, time difference between baseline and follow-up, and school cluster effects).

Results: Preliminary results showed no evidence of a relationship between any mobile phone use activity at baseline and hand grip or pinch strength in either hand at follow-up. However, when examining change over time in mobile phone use, preliminary results indicated that increases in instant messaging, text messaging, and social network site use on a mobile phone between baseline and follow-up were associated with stronger hand grip, key pinch and palmar pinch measures at follow-up. For example, an IQR increase in instant messaging frequency over the two-year follow-up period was associated with a 0.72kg (95% CI: 0.06, 1.39) increase in grip strength in the dominant hand at follow-up.

Conclusions: This is the first longitudinal study to examine the relationship between mobile phone use and hand grip or pinch strength. Our preliminary results oppose previous small-scale cross-sectional research findings, as we find no evidence of any negative impacts of mobile phone use on grip or pinch strength in adolescents, with some specific activities e.g., messaging, actually associated with stronger grip and pinch strength.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

**MOST-LIKED RESEARCH PRESENTATION
AWARDED BY THE PUBLIC****ORIGINAL RESEARCH****09. Cognitive Impairment and Its Influencing Factors Among Elderly at Residential Homes in Western Tamil Nadu -A Cross-sectional Study**Sri Thabasni S K¹, Muthathal S², Dhaarani Dharmaraj³, S Supriya Sri¹¹Final-year Medical [MBBS] Student. Karpagam Faculty of Medical Science and Research, Coimbatore, India.² M.B.B.S, MD – Community Medicine. Assistant Professor. Karpagam Faculty of Medical Science and Research, Coimbatore, India.³ Final year post graduate Student: MD – Community Medicine. Karpagam Faculty of Medical Science and Research, Coimbatore, India. <https://www.youtube.com/watch?v=hJcU1w8oM&list=PLhqNq3xjClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=12918s>

Background: The global population is experiencing rapid aging, with projections indicating that the number of older adults will double by 2050. In India, it is anticipated that one in every five individuals will be aged 60 years or above in the near future. This demographic transition brings with it an increasing prevalence of cognitive impairment (CI), characterized by declines in memory, attention, or executive functioning that are more severe than typical age-related changes but do not meet criteria for dementia. Elderly individuals living in old age homes face additional vulnerabilities due to social isolation, weakened family support, and adjustments to institutional care. Despite these challenges, cognitive health within residential care settings has received limited attention in the Indian context. Identifying the prevalence and contributing factors of CI is essential for promoting appropriate healthcare interventions and safeguarding the autonomy and well-being of older adults.

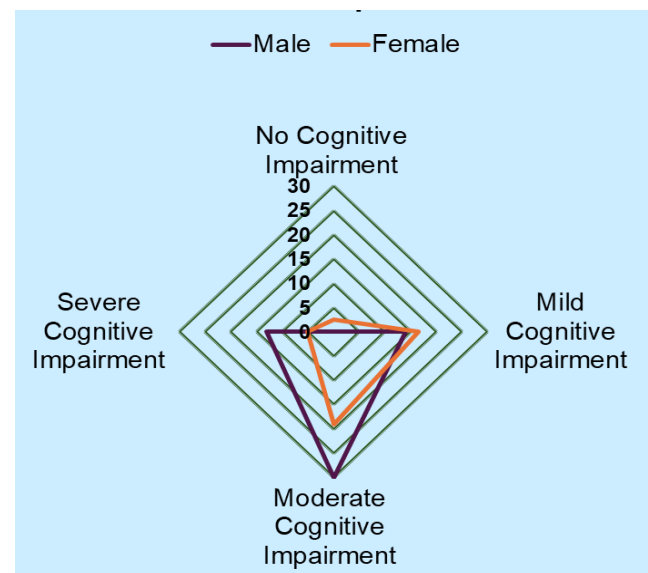
Aim: The present study was designed to evaluate the prevalence of cognitive impairment and to examine the factors associated with it among elderly residents of old age homes in Coimbatore.

Methods: A cross-sectional study was carried out between November 2024 and February 2025 across selected old age homes in Coimbatore. Using multistage random sampling, 200 individuals aged ≥ 60 years were recruited. Cognitive function was assessed with the Montreal Cognitive Assessment (MoCA). A pretested semi-structured questionnaire collected data on demographic and socioeconomic characteristics, financial dependence, and past occupations, as well as health conditions and lifestyle factors. Anthropometric measurements and clinical parameters such as blood pressure and pulse were recorded. Data were analysed using SPSS v25.0, and associations were tested at a significance level of $p < 0.05$.

Results: Among 200 elderly participants (mean ($\pm$ SD) age 69.8 ± 9.8 years; 57% men, 43% women), one-third were illiterate and only 10.5% received a pension. The mean MoCA score was 15.2 ± 5.6 , with 30.5% showing mild, 49% moderate, and 18% severe cognitive impairment, and it was notably higher among women (figure 1). Cognitive impairment was significantly associated with sex ($p = 0.03$), education ($p < 0.001$), past occupation ($p = 0.020$), pension status ($p < 0.001$), and financial dependence ($p < 0.001$). Hypertension (34%), diabetes (16.5%), and sleep disturbances (28.5%) were the common comorbidities. These findings indicate a high burden of cognitive impairment among institutionalized older adults, with socioeconomic and health factors playing a critical role.

Conclusion: Cognitive impairment was highly prevalent among elderly residents of old age homes and was associated with socioeconomic factors. These findings highlight the urgent need for the annual cognitive screening in the institutional settings and its integration into the existing national geriatric health program in the country. Addressing modifiable risk factors including financial dependence, limited social interaction, and sleep problems can improve the overall quality of life, reduce the caregiver burden, and promote cognitive health as a cornerstone of dignity and healthy aging.

Figure 1. Gender-based distribution of Cognitive Impairment Using Radar Plot.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

**1ST PLACE FOR BEST ORAL PRESENTATION AT THE
WCMR ORIGINAL RESEARCH BASED ON JUDGE
SCORE.**

ORIGINAL RESEARCH

10. Association Between Diabetes Mellitus and Intraoperative Awareness During General Anesthesia: A Retrospective Cohort Study

Ngoc Bich Nguyen BS,¹ Zhenghao Wang BA,¹ Eduardo Espiridion MD.²

¹ Drexel University, Reading, Pennsylvania, US

² Reading Hospital, Reading, Pennsylvania, US



<https://www.youtube.com/watch?v=4rJ3DHWeKRs&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=2047s>

Background: Despite advancements in anesthetic techniques, specific patient populations remain vulnerable to intraoperative awareness. Diabetes mellitus (DM), increasingly prevalent and often accompanied by significant comorbidities, may complicate anesthetic management and mask signs of inadequate anesthetic depth. This study investigates whether DM is independently associated with an increased risk of unintended intraoperative awareness.

Methods: A retrospective cohort analysis was conducted using the TriNetX research platform, a federated health database. Two cohorts were identified: patients with DM and a control group without DM undergoing surgery under general anesthesia. Propensity-score matching (1:1) was used to control for confounders, including cognitive impairment, chronic obstructive pulmonary disease, substance use, cardiovascular disease, and anesthesia type. The incidence of intraoperative awareness was compared between groups.

Results: After matching, 193,868 patients were included in each cohort (total n=387,736). The incidence of intraoperative awareness was significantly higher in the DM group (0.027%, n=52) compared to the non-DM group (0.015%, n=29). DM was associated with a statistically significant increased risk (absolute risk difference: 0.012%, 95% CI: 0.003–0.021%, p=0.0106). Diabetic patients had nearly twice the risk of intraoperative awareness (RR=1.793, 95% CI: 1.139–2.824; OR=1.793, 95% CI: 1.139–2.825).

Conclusion: DM significantly increases the risk of intraoperative awareness during general anesthesia. These findings underscore the importance of heightened anesthetic vigilance and personalized monitoring strategies in diabetic patients to mitigate this risk.

Table 1. Comparison of Intraoperative Awareness Incidence Between Diabetic and non-Diabetic Cohorts.

Cohort	Patients in Cohort	Patients with Outcome	Risk
Diabetes Cohort	193,868	52	0.027%
Non-Diabetic Control Cohort	193,868	29	0.015%

Risk Difference	95% CI (Risk Diff)	z	p	Risk Ratio	95% CI (Risk Ratio)	Odds Ratio	95% CI (Odds Ratio)
0.012%	(0.003%, 0.021%)	2.556	0.0106	1.793	(1.139, 2.824)	1.793	(1.139, 2.825)

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ORIGINAL RESEARCH

11. The Effects of Community-Based Mental Health Interventions on Resettled Adult Refugees from Muslim-Majority Countries

Ahmad Elhajja¹, Ilia Talebi Dolouei²¹ MD Candidate. David Geffen School of Medicine, Los Angeles, United States² Third-year Undergraduate Student. University of California, Los Angeles, United States.

<https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=4169s>

Background: Although refugees from Muslim-majority countries represent a vast percentage of displaced populations globally, limited data exists on their resettlement into high-income nations. This gap has resulted in an inadequate and inequitable method of care when addressing their mental health needs, often overlooking relevant cultural and religious frameworks. The religious beliefs of these individuals, paired with the sociocultural assumptions placed upon them both internally and externally, affect help-seeking behavior and psychosocial resilience which ultimately manifests in poorer health outcomes. These issues are compounded because refugees often face significant stressors through discrimination, societal stigma, and trauma from forced migration which exacerbate disparities. Furthermore, the COVID-19 pandemic disproportionately affected refugee populations that struggled with limited access to treatment and healthcare information. The pandemic amplified epidemic hysteria fueled stigmatization of refugee populations which further increased their distrust in Western medicine and decreased compliance with healthcare systems.

Aim: To identify the effects of community-based mental health interventions in resolving this population's unmet mental health disparities.

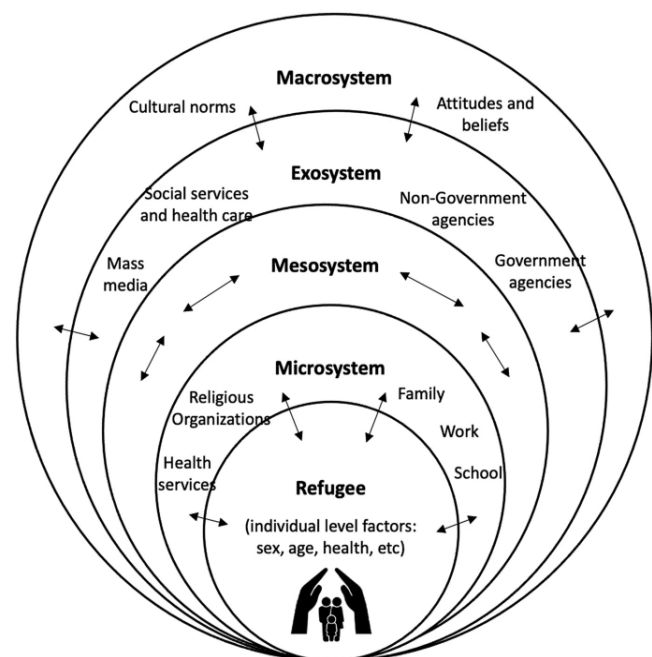
Methods: We conducted an integrative review of the literature on this topic to illuminate the effectiveness of this healthcare model for resettled adult refugees from Muslim-majority countries. Data extracted from the literature included information on interrelated environmental systems that affect mental health, descriptions of the measures taken at each of the four ecological levels of influence, and reported outcomes in regards to effectiveness and challenges.

Results: Interventions for depression, anxiety, and psychological distress were most prevalent, addressed most commonly through strengthened social-bondedness and interpersonal relationships among refugees and their communities. Programs which address cultural stigma through psychosocial support were suggested as developments which can reinforce Muslim refugee identity and thereby enhance healthcare delivery. Eligible publications suggest that mental health programs addressing social connectedness, early on-set community health intervention, and direct refugee

engagement within program development improves overall psychosocial wellbeing. Common results included an increase in social encouragement among refugees, the implementation of communal healing practices, and a strengthened connection between refugees and their families overseas. Such family centered interventions have been shown to be feasible, accepted, and effective in reducing traumatic stress and depression in certain populations. Faith-informed interventions led by community members have likewise shown significant benefits for resettled Muslim refugees in terms of reducing PTSD and depression. The COVID-19 pandemic underscored virtual care as a promising potential tool for psychotherapy of refugee populations. However, telehealth must be properly integrated into telehealth systems to overcome technological and cultural barriers to provide meaningful care to refugee populations.

Conclusion: The persisting mental health and intervention needs among these resettled refugees warrant high-quality, advanced studies to facilitate the equitable mobilization of resources and attention. Collaborative partnerships with the stakeholders, local communities, and refugees play a vital role in the successful implementation of equitable health care.

Figure 1. Bronfenbrenner's Ecological Model Diagram Applied to Refugees.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://open.library.pitt.edu/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

12. **Emotional and Psychological Dependence of Medical Students on Artificial Intelligence Chatbots: A Cross-sectional study**

Sheraz Qasim¹, Ali Hassan², Fatima Saleemi³, Mirza Shaheer Hyder⁴, Muhammad Ibrahim Khalil¹, Adeenah Irshad⁵, Safia Bibi⁶, Ali Sher, Ahsan Ali⁷

¹ Ameer-ud-Din Medical College Lahore

² Allama Iqbal Medical College, Lahore

³ House Officer, Internal Medicine, Lahore General Hospital, Lahore, Pakistan

⁴ Dow University of Health Sciences, Karachi, Pakistan

⁵ Liaquat University of Medical and Health Sciences Jamshoro

⁶ Quetta Institute of Medical Sciences

⁷ Bacha Khan medical College, Mardan

▶ <https://www.youtube.com/watch?v=hJicU1w8oM&list=PLhQnQ3xJClbaf00Y5bvBcgMmXpgzJxd44&index=5&t=2389s>

Background: Artificial Intelligence (AI) chatbots are programs designed to simulate human-like conversations to provide information and parasocial interaction. Even though these tools may provide a sense of companionship-like bonds, overreliance risks conflating support with dependence. This raises critical questions regarding whether the very features that enhance chatbot engagement may, through repeated or emotionally charged interactions, inadvertently promote emotional dependence. Our study aimed to evaluate the emotional and psychological dependence on AI chatbots among medical students, a population group at higher risk of adopting such coping strategies due to intense stress and limited avenues for emotional support.

Methods: A national cross-sectional survey was conducted among medical students enrolled in various public and private institutions across Pakistan over a period from July to August 2025 through an online questionnaire with assured anonymity. The survey was voluntary, and all participants provided informed consent prior to enrollment. Ethical approval was obtained from Ethical Committee of Ameer-ud-Din Medical College. Data collectors were recruited from different provinces to ensure broad geographic representation, and the survey link was disseminated through institutional and student networks. The questionnaire comprised the following sections: demographics, chatbot usage patterns, emotional expression, psychological help, emotional and psychological dependence, relationship-style dependency, and satisfaction. Reverse coded items were included to minimize acquiescence bias. Dependence was classified as low, moderate, or high using mean $\pm$ SD thresholds. Data were analyzed in SPSS 27 using descriptive and inferential statistics, multivariable regression, and mediation-moderation analyses to address confounding and interaction effects, with significance set at $p \leq 0.05$. The study complied with STROBE guidelines.

Results: Of 1063 responses, 1045 were considered valid; 986 (94.4%) students reported using AI chatbots with 50.7% of users engaging with chatbots daily. The mean age was 21.7 ± 2.1 years, with 53.5%

males. Most participants ($\approx 68\%$) showed moderate overall dependence, while high emotional-psychological and relationship-style dependence were observed in 12.37% and 18.36%, respectively. Students with excellent academic performance reported significantly lower dependence scores than those with good performance ($p = 0.037$). A focused analysis on participants from Punjab revealed significant regional trend ($p = 0.009$), with private-institution students showing higher emotional dependence. All scales were strongly and positively intercorrelated (Spearman $p < 0.001$). Multiple regression identified satisfaction as the strongest predictor of both emotional ($\beta = 0.65$, $p < 0.001$) and relationship-style dependence ($\beta = 0.66$, $p < 0.001$), followed by psychological help-seeking and emotional expression. Mediation analysis confirmed an indirect effect of emotional expression on dependence via satisfaction ($\beta = 0.22$, $p < 0.001$), underscoring satisfaction as a central pathway in chatbot-related dependence.

Conclusion: Medical students show moderate dependence on AI chatbots, driven by satisfaction. The mental well-being of medical students is closely related to both their academic performance and future clinical practice, underscoring the importance of understanding these dynamics. These findings call for education and institutional policies to promote balanced, responsible AI use and safeguard students' mental well-being. Future research should explore the long-term impact of chatbot dependence on students' learning, professional development, and psychological well-being.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

**4TH PLACE FOR BEST ORAL PRESENTATION AT THE
WCMSR ORIGINAL RESEARCH BASED ON JUDGE
SCORE.**

ORIGINAL RESEARCH

**13. Vagus Nerve Neuropathy in SARS-CoV-2 Infection: An
Ultrasound Study**

Jelena Mičić¹,
Serbia

https://www.youtube.com/watch?v=hJlCj1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=7183s

Background: The vagus nerve regulates systemic inflammation through the inflammatory reflex arc. Afferent fibers detect cytokines and relay signals to the brainstem, which activates parasympathetic pathways to suppress inflammation via acetylcholine release in the spleen. Disruption of this "brake system" can lead to cytokine storm, a driver of severe COVID-19. Beyond COVID-19, vagal dysfunction is also implicated in atherosclerosis, asthma, diabetes, Crohn's disease, ulcerative colitis, and autoimmune thyroiditis.

Aim: To determine whether vagus nerve neuropathy can be detected in SARS-CoV-2-infected patients using ultrasound, and to assess its contribution to COVID-19 pathophysiology and related inflammatory conditions.

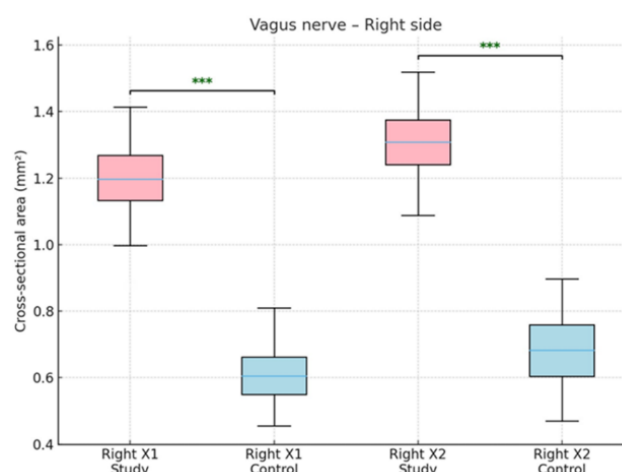
Methods: A prospective study was conducted between October 2021 and April 2022, including 68 patients (mean age 53.1 ± 14.3 years) with PCR-confirmed Delta variant infection and 50 healthy controls (mean age 22.7 ± 2.4 years). Exclusion criteria for controls included chronic illness or medication affecting autonomic function. Ultrasound was performed with a 10–18 MHz linear probe, with patients supine or in lateral decubitus position. The vagus nerve was examined bilaterally at two levels: X1 (carotid bifurcation) and X2 (cricoid cartilage). Cross-sectional area (CSA) was traced just outside the hyperechoic rim. Each measurement was repeated by two independent operators. Data were analyzed using Mann–Whitney U tests (IBM SPSS v26).

Results: On the left side, X1 values did not differ, while X2 showed a borderline increase in the COVID group ($p=0.05$). On the right side, both X1 and X2 were nearly doubled in COVID-19 patients compared to controls ($p<0.001$). Median CSA values were consistently higher in patients (Left X1: 0.77 vs 0.70 mm²; Left X2: 0.87 vs 0.70 mm²; Right X1: 1.20 vs 0.60 mm²; Right X2: 1.30 vs 0.70 mm²). Importantly, this enlargement was observed despite the older age of the patient group, where smaller nerve dimensions would normally be expected. This contrast reinforces the likelihood of pathological involvement rather than age-related variation.

Conclusion: Ultrasound revealed enlargement of the vagus nerve in COVID-19 patients, most prominently on the right side. Although

ultrasound cannot fully distinguish edema from structural neuropathy, the consistent enlargement justifies use of the term neuropathy in a broad sense. These findings support the hypothesis that vagus nerve dysfunction contributes to cytokine storm and severe outcomes in SARS-CoV-2 infection. Moreover, ultrasound emerges as a simple, bedside, non-invasive tool to study cranial nerves in vivo. Given the role of the inflammatory reflex in many chronic diseases, these results may extend beyond COVID-19, offering opportunities for diagnostics, monitoring, and therapeutic interventions targeting vagal pathways.

Figure 1. Box Plot: Comparison of Right Vagus Nerve Cross-sectional Area (Study vs. Control).



Legend: Box plots of vagus nerve cross-sectional area (CSA, mm²) at two levels (X1 – carotid bifurcation, X2 – cricoid cartilage) on the right side in COVID-19 patients and healthy controls. * $p < 0.001$; n.s. = not significant (Mann–Whitney U test).

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

14. Occupational Exposure to Blood / Body Fluid and Anxiety Among Final-Year Medical Students: The Result of the Curricular Gaps in Medical Education

Levent Özdemir,¹ Sena Sude Özyar,¹ Sabrina İsrafilzade,¹ Behrokh Khorasani.¹¹ Bursa Uludağ University, Medical School, Türkiye

▶ https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=5&t=3304s

Background: Occupational exposure to blood and body fluids (BBF) remains a significant hazard globally, with medical students being particularly vulnerable during clinical training. These exposures pose direct blood-borne pathogen transmission risk and considerable psychological sequelae, including anxiety. This study aimed to determine BBF exposure prevalence and characteristics among final-year medical students and investigate their association with anxiety levels, while identifying key contributing factors.

Methods: A cross-sectional study was conducted among 271 final-year medical students at Bursa Uludağ University Faculty of Medicine between January and February 2025, achieving a response rate of 74.9% (n=203). Data were collected via a structured online questionnaire comprising three sections: sociodemographic characteristics, a detailed assessment of occupational BBF exposure history (including frequency, route, procedure, clinical department, and contributing factors), and the Turkish version of the Generalized Anxiety Disorder-7 (GAD-7) scale, a validated self-report tool for anxiety screening. Statistical analysis involved descriptive statistics, bivariate comparisons (Chi-square, t-test), and multivariate Negative Binomial Regression.

Results: More than half of the participants (56.2%, n=114) reported at least one BBF exposure during their clinical internships, with the majority (67.5%, n=77) experiencing multiple (≥ 2) incidents. Among the reported exposure routes, cutaneous contact was the most frequent (23.6%), followed by percutaneous injuries (12.8%). Exposures occurred most frequently during venous blood draws (50.0%) and arterial punctures (33.3%). Rotations in the Emergency Department were associated with the highest proportion of exposures (66.7%). While glove usage was universal during reported exposures (100%), adherence to other personal protective equipment (PPE) was low (masks: 58.8%, gowns: 16.7%). The leading self-reported contributing factors were intense working hours (31.6%), pressure from assistants (21.9%), and inexperience (20.2%). The overall prevalence of anxiety (GAD-7 score ≥ 5) was 50.2%. Students who experienced a BBF exposure had a significantly higher mean GAD-7 score (7.21 ± 5.38) compared to their unexposed peers (5.39 ± 5.15 ; $p=0.016$). Multivariate regression analysis confirmed that BBF exposure itself was a significant predictor of higher anxiety severity ($p<0.001$), equivalent to a 2.1-point increase in the mean GAD-7 score. Rotations in high-risk departments (Emergency

Medicine and General Surgery) further amplified this risk ($p<0.001$). Notably, psychosocial factors such as performance anxiety ($p<0.001$) and pressure from assistants ($p<0.001$) demonstrated even stronger associations with anxiety severity than the physical exposure event.

Conclusion: BBF exposure is highly prevalent among final-year medical students and is significantly associated with increased anxiety levels, creating a dual burden. The high rate of recurrent exposures and inadequate PPE use beyond gloves, especially in high-acuity settings like the Emergency Department, points to critical gaps in current occupational safety training and practice. The findings highlight that psychological factors, including hierarchical pressure and performance anxiety, are potent contributors to both the risk of exposure and subsequent anxiety, suggesting a stress-injury cycle. There is an urgent need to evolve beyond traditional didactic training towards integrated, resilient protocols that combine enhanced, stress-inoculated simulation-based procedural training, strict enforcement of comprehensive PPE use, and embedded psychological support systems within the medical curriculum to safeguard both the physical and mental well-being of future physicians.

Table 1. Multivariate Negative Binomial Regression for Anxiety Severity (GAD-7 Scores)

Predictor	IRR	95% CI	p-value
Blood/Body Fluid Exposure	1.34	[1.18, 1.52]	<0.01**
High-Risk Department*	1.52	[1.29, 1.80]	<0.01**
Contributing Factors (Ref: Inexperience)			
Fatigue	1.18	[0.94, 1.48]	0.15
Long Working Hours	1.42	[1.13, 1.78]	0.01**
Pressure from Assistants	1.61	[1.27, 2.04]	<0.01**
Performance Anxiety	1.85	[1.32, 2.60]	<0.01**
Time Management Issues	0.97	[0.72, 1.31]	0.84
Anxiety Level	1.92	[1.15, 3.22]	0.01*
Age	0.99	[0.97, 1.02]	0.54
Gender (Female)	0.98	[0.83, 1.16]	0.82

Legend: High-risk departments: Emergency Medicine and General Surgery. Model Fit: Log-likelihood = -438.7, AIC = 901.4; ** $p<0.01$, * $p<0.05$

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

15. Evaluation of HMGB1 serum levels and its involvement in depressive symptoms in Obstructive Sleep Apnea Patients (OSA)

Julia Jaromirska¹, Agata Gabryelska¹, Marcin Sochal¹, Szymon Turkiewicz¹,

¹ Medical University of Lodz, Lodz, Poland

 https://www.youtube.com/watch?v=hJicU1w8oM&list=P_LhqNg3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=3752s

Obstructive sleep apnea (OSA) is a chronic disorder marked by recurrent airway obstruction, leading to sleep fragmentation and intermittent hypoxia. It is associated with neuropsychiatric comorbidities, particularly depression. Both OSA and depression involve systemic inflammation. High-mobility group box 1 (HMGB1), a ligand of TLR4, promotes proinflammatory cytokine secretion and has been linked to depression. Its secretion can be induced by reactive oxygen species. This study aimed to assess HMGB1 concentrations in OSA patients and examine their relationships with polysomnography (PSG) parameters, hypoxia-inducible factor 1 α (HIF-1 α), and depressive symptoms. The study included 152 participants undergoing PSG. Based on apnea-hypopnea index (AHI), they were divided into OSA (AHI $\geq$ 5; n=102) and non-OSA (n=50) groups. Depression was assessed with the Montgomery-Åsberg Depression Rating Scale (MADRS), and insomnia with the Insomnia Severity Index (ISI). Serum HMGB1 and HIF-1 α levels were measured using ELISA. Participants were further categorized into control (n=21), depression only (n=29), OSA only (n=57), and OSA with depression (n=45) subgroups. HMGB1 levels differed between groups (p=0.014). Controls had lower concentrations (40.0 pg/ml) compared to depression (45.6 pg/ml, p=0.013) and OSA+depression (44.9 pg/ml, p=0.049). Across all participants, HMGB1 correlated with MADRS scores (R=0.178, p=0.028), but not within subgroups. HMGB1 and HIF-1 α were correlated in the whole sample (R=0.278, p=0.011) and particularly in depression and OSA subgroups. No association was observed between OSA severity and HMGB1 levels. In conclusion, elevated HMGB1 is linked to depression, independent of OSA presence, and relates to depressive symptom severity. HMGB1 dysregulation may contribute to depression development, warranting further investigation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

16. Characterisation of Morphological Changes and Retinal Decay in a Retinal Degeneration Murine Model of Retinitis Pigmentosa

Harriet Fallon¹,¹ South Tyneside and Sunderland NHS Foundation TRUST, UK

https://www.youtube.com/watch?v=hJicU1w8oM&list=P_LhqNg3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=5&t=8104s

Retinitis pigmentosa (RP) is a complex, incurable, polygenic retinal dystrophy that initially presents as loss of night vision in childhood, and progresses to severe, irreversible loss of vision in adult patients. The *Pde6rd10* mouse models a progressive retinal degeneration akin to RP seen in humans. These mice carry a spontaneous mutation in the rod-phosphodiesterase gene that leads to photoreceptor degeneration peaking between (P)20-25 postnatal days, with degenerative plastic changes of second- and third- order neurones becoming increasingly severe following this. RP is currently without cure, however one such idea for successful vision restoration relies on the intraocular injection of haematopoietic stem cells as rod and cone photoreceptor precursor cells. There is a requirement to determine at which points there is sufficient retinal degeneration to for there to be a treatment need, without compromising the integrity of the scaffolding neurones in the remaining retina as retinal disorganisation worsens. Early transplantation of differentiated photoreceptors could delay or even prevent remodelling of the second-order neurones and cell death by providing synaptic input to those circuits.

The study aim was to determine the peak range of photoreceptor cell death and evaluate the structural modifications to retinal neurones following photoreceptor degeneration in the *Pde6rd10* mouse model, documenting the sequence of changes of second- and third-

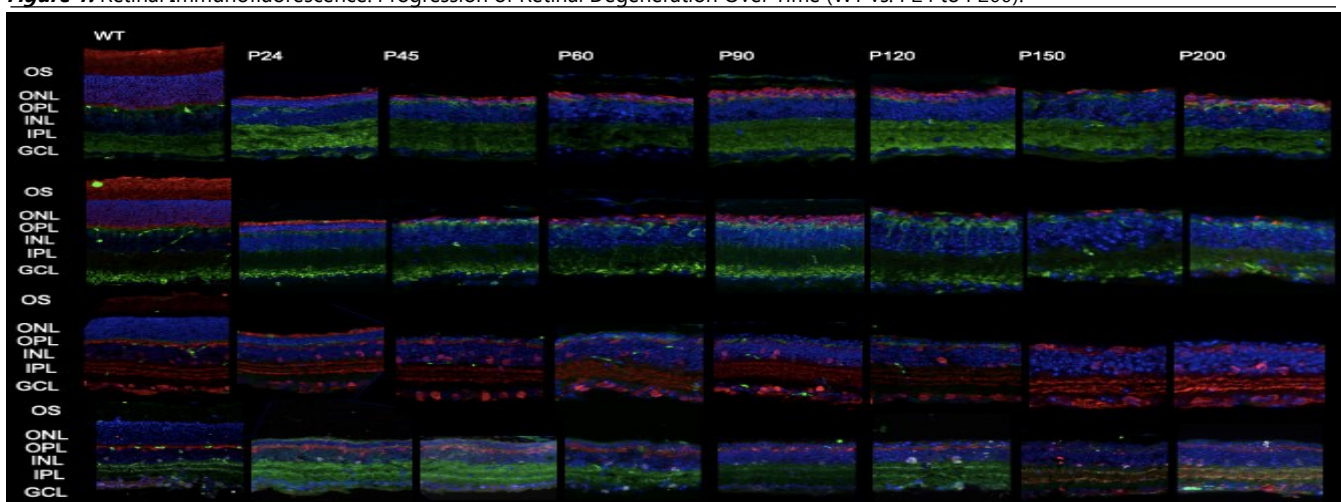
order retinal cells and their synaptic terminals to an advanced stage of degeneration. This data can be used to inform the timespan within which transplanted photoreceptor precursor stem cells could effectively integrate with the retinal cells in the *rd10* retina and function as normal, restoring normal vision.

Immunohistochemistry and qualitative immunofluorescence microscopy were performed on retinal cryosections of *rd10* mice to detect and assess the presence of specific cellular markers across of *wild-type* and postnatal days 21-200 (P21-200) of the *rd10* mouse retina. Antibodies against cell and synapse-specific markers were used for single- and multiple-labelling studies. Histological staining was performed to quantify the degradation of the photoreceptor-containing outer nuclear layer (ONL) of the retina.

Immunofluorescence microscopy demonstrated a remarkable deterioration in the number of rods in the ONL and subsequent changes in the morphology of the retinal cells that synapse with the photoreceptors. No outer segments were distinguishable beyond postnatal day (P24). Synaptic connections were reduced in number, and second order amacrine cells and horizontal cells were reduced in size and complexity throughout the retinal layers in all *rd10* postnatal day samples. Haematoxylin and eosin staining showed a statistically significant ($p < 0.0001$) reduction in the depth of the photoreceptor-containing ONL in all measured intervals from the wild-type to P200, most significantly between the WT and P23; 60.43um and 15.24um, respectively (more about P23-P24). Peak interval deterioration of photoreceptors was determined at P23-24 in addition to important findings about alterations in the surrounding retinal architecture.

This study helps to inform the optimum timeline for the intraocular injection and transplantation of haematopoietic stem cells, and thus the replacement of degenerated photoreceptors ultimately for the potential restoration of vision in RP.

Figure 1. Retinal Immunofluorescence: Progression of Retinal Degeneration Over Time (WT vs. P24 to P200).



Legend: single, double, and triple-stained immunofluorescence cryosections of wild type, and *rd10* postnatal day 24-200 mouse retinas showing progressive retinal cell - including photoreceptor cell - and synapse degeneration through all cell layers.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

17. Handgrip Strength Asymmetry in Middle-aged and Older Adults: Clinical Aspects

Anastasiia Kolesnykova,¹ Maksym Parii,² Zoia Salii.³

¹ Medical Student, Ivan Horbachevsky Ternopil National Medical University, Ternopil, Ukraine

² MD within the first year of graduate, St. Michael Clinical Hospital of Kyiv, Kyiv, Ukraine

³ Associate Professor, DMS, Ivan Horbachevsky Ternopil National Medical University, Ternopil, Ukraine

 https://www.youtube.com/watch?v=hJcU1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=4114s

Background: Identifying early markers of neurodegeneration remains a key challenge. Recent studies (Zammit AR, 2021; Chen Z. et al., 2022; Wang et al., 2023) suggest an association between handgrip strength (HGS) asymmetry and cognitive decline. This study explores clinical characteristics of HGS asymmetry in middle-aged and elderly patients.

Methods: Ninety patients (mean age 63.7 ± 1.2 years; 58.9% men) were enrolled. Inclusion criteria: age >45 , preserved hand function. HGS was measured using a KERN MAP 130K1 dynamometer. Asymmetry coefficient was defined as the ratio of non-dominant to dominant hand strength; values <0.9 or >1.1 indicated asymmetry. Cognitive function was assessed via the MoCA test; anxiety and depression via the HADS scale.

Results: Mean HGS: dominant hand – 28.5 ± 1.8 kg, non-dominant – 25.9 ± 1.3 kg. HGS asymmetry was found in 54.4% of patients (dominant hand – 38 cases; non-dominant – 11). MoCA scores were lower in the asymmetry group (22.8 ± 0.6) vs. the non-asymmetry group (24.8 ± 0.4 ; $p < 0.05$). Significant declines were observed in visuoconstructive skills (1.67 ± 0.24 vs 2.58 ± 0.30) and memory (1.61 ± 0.39 vs 2.11 ± 0.40). MoCA negatively correlated with age ($r = -0.39$) and anxiety ($r = -0.32$). In the asymmetry group, strong correlations were found between gender and muscle strength ($r = -0.70$), and between muscle strength and MoCA scores ($r = 0.34$).

Conclusion: HGS asymmetry was present in over half of patients and was associated with lower cognitive scores. The asymmetry coefficient may serve as a clinical marker of early cognitive decline.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ORIGINAL RESEARCH

18. From Observation to Participation: Gender Differences and Surgical Exposure among Medical Students

Nnaemeka Emmanuel Mgbedo¹, Jametta Ukpong², Alvin

Turay,³ Orugbaoghene Mba⁴, Oritsemimajemite Lori⁴

¹ University of Georgia, Georgia

² Illia state university, Georgia

³ European University: Tbilisi

⁴ Caucasus International University: Tbilisi, Tbilisi, GE

https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1baf00Y5bvBcgMmXpgzJxd44&index=5&t=6796s

Introduction: Surgical rotations are critical to the clinical education of medical students, bridging theoretical knowledge with practical experience. In many medical institutions, the transition from passive observation to active participation in surgical settings remains inconsistent and may be influenced by gender disparities. This study aimed to assess the extent of surgical exposure among clinical medical students in Georgia, with a particular focus on gender-based differences in opportunities to participate actively during general surgery rotations.

Methods: A cross-sectional survey was conducted among undergraduate medical students from the University of Georgia, Ilia State University, European University, Caucasus University, and Caucasus International University in Tbilisi, following ethical approval. The survey was carried out from June 27 to July 18, 2025. Participants were asked about the duration of their general surgery rotation, the number and types of procedures they observed and assisted with, and their involvement in basic surgical tasks. Perceptions of supervisory support, feedback, and overall satisfaction were measured using a Likert scale. Gender-based comparisons were analyzed using independent sample t-tests, with statistical significance at $p < 0.05$.

Results: Of the 96 respondents (mean age: 24.05 ± 2.65 years), 52 were female (54.2%) and 44 male (45.8%). Most students (58.3%) spent 2–4 weeks in general surgery rotations. Only 70.8% had the chance to perform basic surgical skills under supervision. Male students were more likely to have scrubbed in during surgeries compared to females. Males also reported significantly more opportunities to perform basic surgical tasks ($p = 0.007$) and assist in operations ($p = 0.017$). While both genders reported similar perceptions of supervisor approachability, female students rated their overall learning experience lower on average. 43.8% of all students strongly disagreed they had sufficient hands-on practice, and only 16.7% received regular constructive feedback. When asked whether the experience increased their interest in pursuing a surgical career, only about one-third agreed or strongly agreed, with a slight but not statistically significant male predominance.

Conclusion: This study showed the presence of gender-based disparities, with male students receiving significantly more hands-on opportunities. Addressing these gaps through more structured and equitable training is essential to ensure that all students gain meaningful surgical experience.

Table 1. Survey of Medical Students' Surgical Exposure, Participation, and Satisfaction

Exposure to Surgical Procedures		
Approximately how many weeks did your General Surgery rotation last?		
Less than 2 weeks	5	5.2
2–4 weeks	56	58.3
5–8 weeks	26	27.1
More than 8 weeks	9	9.4
How many surgeries did you observe during your rotation?		
Less than 2 weeks	22	22.9
1–5	47	49.0
6–10	17	17.7
More than 10	10	10.4
How many surgeries did you assist in (scrubbed in)?		
None	66	68.8
1–3	24	25.0
4–7	3	3.1
More than 7	3	3.1
Which types of procedures were you exposed to?		
Appendectomy	34	35.4
Hernia repair	38	39.6
Laparotomy	57	59.4
Mastectomy	85	88.5
Cholecystectomy	51	53.1
Amputations	87	90.6
Other	44	45.8
Did you have the opportunity to perform basic surgical skills under supervision?		
Yes	68	70.8
No	28	29.2
Perception and Satisfaction		
How would you rate the overall learning experience during your surgery rotation?		
Excellent	15	15.6
Good	26	27.1
Average	33	34.4
Poor	22	22.9
Statement		
I was actively involved during ward rounds.		
Strongly disagree	25	26.0
Disagree	21	21.9
Neutral	28	29.2
Agree	15	15.6
Strongly agree	7	7.3
I was given chances to scrub in and assist in surgeries.		
Strongly disagree	41	42.7
Disagree	21	21.9
Neutral	13	13.5
Agree	15	15.6
Strongly agree	6	6.3
My supervisors were approachable and willing to teach.		
Strongly disagree	15	15.6
Disagree	7	7.3
Neutral	30	31.3
Agree	27	28.1
Strongly agree	17	17.7
The rotation improved my clinical and procedural confidence.		
Strongly disagree	25	26.0
Disagree	14	14.6
Neutral	29	30.2
Agree	14	14.6
Strongly agree	14	14.6
I had enough hands-on practice during the rotation.		
Strongly disagree	42	43.8
Disagree	29	30.2
Neutral	17	17.7
Agree	5	5.2
Strongly agree	3	3.1
I received constructive feedback regularly.		
Strongly disagree	32	33.3
Disagree	22	22.9
Neutral	26	27.1
Agree	9	9.4
Strongly agree	7	7.3
I am now more interested in pursuing surgery as a career.		
Strongly disagree	24	25.0
Disagree	13	13.5
Neutral	27	28.1
Agree	13	13.5
Strongly agree	19	19.8

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



ORIGINAL RESEARCH

19. Antimicrobial resistance awareness and antibiotic prescribing behavior among healthcare workers

Abdalrhman Salah¹,

¹ 4th year medical student, University of Baghdad college of medicine, Iraq

▶ https://www.youtube.com/watch?v=hJicJ1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=6122s

Background: Antimicrobial resistance (AMR) is on the rise worldwide and presents a significant threat in Iraq, where ongoing conflict and fragile health systems contribute to elevated levels of multi-drug-resistant (MDR) organisms. It is increasingly recognized as a public health challenge in Iraq, largely due to the prevalent misuse and over-prescription of antibiotics. Research indicates that numerous physicians in public hospitals often prescribe antibiotics based on empirical evidence while community pharmacists commonly dispense antibiotics without prescriptions, which exacerbates self-medication and misuse. Although national AMR control plans are in place, their implementation is still limited. Surveillance initiatives have uncovered high levels of multidrug-resistant bacteria, including *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus aureus*, in both adult and pediatric populations. It is essential to raise awareness about AMR in Iraq. This necessitates coordinated efforts across healthcare, agriculture, and environmental sectors consistent with the One Health approach to encourage responsible antibiotic usage, enhance surveillance, and enforce regulatory measures.

Objective: The current study conducted to evaluate healthcare workers' (HCWs) awareness, practices, and institutional barriers to AMR control in a sample of Baghdad hospitals.

Methods: A cross-sectional survey from July to September 2025 was designed. About 196 HCWs across five hospitals in Baghdad City were involved to assess perceptions of AMR, infection control practices, and stewardship awareness.

Results: The largest proportion of participants were from Baghdad Medical City (64.3%), followed by Al-Yarmouk Teaching Hospital (16.8%), Al-Kindy Teaching Hospital (10.7%), Madain Hospital (7.7%), and Zafaraniyah General Hospital (0.5%). Most respondents were residents (39.8%) or pharmacists (35.7%); 86.2% considered AMR a major problem. Gram-negative (43.2%) and Gram-positive (42.1%) were almost equal. The most frequently reported Gram-positive bacteria were *Staphylococcus aureus* (12.6%) and Methicillin-resistant *Staphylococcus aureus* (MRSA) (6.6%). Other reported organisms included Vancomycin-resistant *Enterococcus* (2.2%) and *Streptococcus* (1.1%). For Gram-negative organisms, the most problematic species were *Pseudomonas aeruginosa* (14.2%), *Acinetobacter baumannii* (6.0%), *Klebsiella pneumoniae* (5.5%), and *Escherichia coli* (2.2%). Just over half (53.1%) of HCWs reported that their hospitals had infection control policies, while (36.2%) stated no such policies existed, and (10.7%) were unaware. Training on infection

prevention and control was infrequent: the majority (62.8%) reported no training at all, while only (21.4%) received training every 6 months, (8.7%) every 3 months, and (7.1%) monthly. Awareness of stewardship programs was limited (45.4%). The internal medicine ward (12.8%), surgery wards (9.7%), and intensive care unit (9.4%) were significantly associated with MDR infections. The resuscitation care unit (7.7%), burn wards (2.0%), and respiratory wards (2.0%) were also reported, while other wards such as pediatrics, hematology, and infection control unit had fewer mentions.

Conclusion: Despite widespread recognition of AMR, Iraqi hospitals face critical gaps in training, stewardship, and policy implementation. Nearly two-thirds of HCWs had never received infection prevention training. Pathogens such as *Pseudomonas aeruginosa* and *Staphylococcus aureus* were equally detected and were the most common. Multi drug-resistant infections were concentrated in internal medicine, surgery, and intensive care units, with Gram-negative organisms predominating. Urgent, system-wide interventions are needed to strengthen infection control and curb the growing burden of multi drug resistance.

Table 1. Infection Control Policies, Training, Actions Against MDR Organisms, and Awareness of Antimicrobial Stewardship

Variable	Category	Frequency	Percent
Does the hospital have infection control policies?	I don't know	21	10.7%
	No	71	36.2%
	Yes	104	53.1%
How often do you have training on infection prevention and control?	Every 3 months	17	8.7%
	Every 6 months	42	21.4%
	Every month	14	7.1%
	No training at all	123	62.8%
Which actions do you take when you have a case of multi-drug resistant (MDR) organism in your ward?	Inform the doctor	132	67.3%
	Inform the infection control nurse	18	9.2%
	Inform the microbiologist	19	9.7%
	Inform the senior nurse	11	5.6%
	Nothing	16	8.2%
Are you aware of antimicrobial stewardship policy at the hospital?	No	107	54.6%
	Yes	89	45.4%

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ORIGINAL RESEARCH

20. Publication Rate of Students and Graduates of the Program of Combined Studies in Medicine (PECEM), an MD/PhD program of Mexico

Jennifer Eble-Gaytán,¹ Ana Flisser,² Tanya Plett-Torres.²

¹ Social Service Medical Student, Program of Combined Studies in Medicine. National Autonomous University of Mexico. Faculty of Medicine. Avenida Universidad 3000, Ciudad Universitaria, Coyoacán, 04510, Ciudad de Mexico

² PhD, MSc, National Autonomous University of Mexico. Faculty of Medicine. Avenida Universidad 3000, Ciudad Universitaria, Coyoacán, 04510, Ciudad de Mexico

▶ <https://www.youtube.com/watch?v=hJicJ1w8oM&list=PLhQnq3xJClbaFO0Y5bvBcgMmXpgzJxd44&index=5&t=17047s>

Background: Clinician-scientists play a critical role in bridging biomedical research and clinical practice, offering innovative solutions to the complexity of health challenges worldwide. MD/PhD programs provide a structured pathway for students to simultaneously develop clinical expertise and research skills. While these programs are common in North America and Europe, there are a few in Latin America, like the Program of Combined Studies in Medicine (PECEM) of the National Autonomous University of Mexico (UNAM) that was established in 2011 as one of the first initiatives of its kind in Mexico to integrate undergraduate medical education with rigorous research training, aiming to graduate physicians with both clinical competence and doctoral-level expertise. Evaluating the scientific productivity of PECEM students is essential to understand its contribution to academic medicine and the development of physician-scientists in Mexico.

Methods: A cross-sectional study was conducted, including all articles published by PECEM students and graduates between 2013 and the first half of 2025. The search was performed in the Scopus database to identify publications authored by program participants. Each publication was examined individually to extract the publication year, journal type (international or national), impact factor of the journal, number of citations, and research topic. Additional demographic data from PECEM enrollment and graduation records were also reviewed. A database was built using Microsoft Excel 2010, and descriptive analyses were conducted to determine publication trends, productivity by generation, thematic distribution, and average citations.

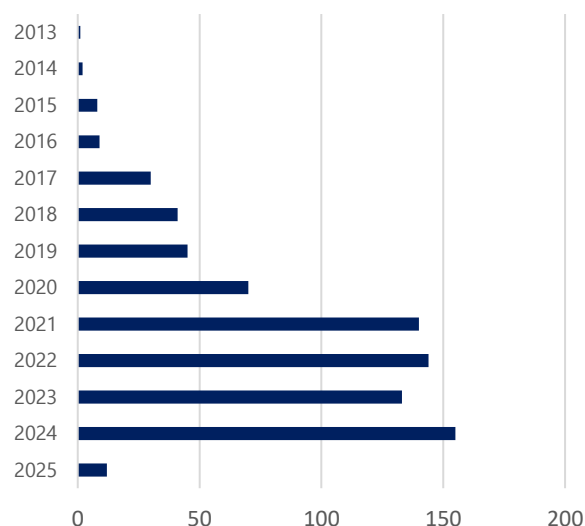
Results: Between 2013 and 2025, PECEM students produced 790 original articles. Of these, 749 (94.8%) were published in international journals, while 41 (5.2%) appeared in national journals. The second generation of PECEM students contributed the largest proportion of publications (33.54%). Research topics were diverse, although endocrinology (13.42%) and applied statistics (12.28%) were the most frequent, followed by oncology, infectious diseases, and epidemiology. The average impact factor of journals where PECEM

students published was 4.26, with an average of 17.92 citations per article, underscoring the visibility and academic relevance of their work.

As of 2025, PECEM includes 110 students distributed across 14 cohorts, with 30 graduates who sum up 542 (68.57%) of the articles published. Among them, 9 women (8.18%) and 21 men (19.09%) have successfully obtained both degrees. The program has demonstrated steady growth in student enrollment, accompanied by an increase in research output, particularly notable after 2021, coinciding with the global scientific response to the COVID-19 pandemic.

Conclusion: PECEM at UNAM represents an innovative model for integrating clinical training with scientific research at the undergraduate level in Mexico. Its experience demonstrates that it is possible to train physician-scientists capable of making significant contributions to biomedical knowledge and clinical practice. By promoting early scientific productivity, the program helps to reduce the gap in medical publications in Latin America and strengthens the training of professionals with national and international impact. PECEM serves as a reference model for other institutions seeking to expand the role of physician-scientists in Latin America, fostering a stronger future for healthcare systems and the advancement of modern medicine.

Figure 1. Articles Published Per Year



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

21. **The Intersection of Rheumatology and Cardiology: Cardiac Disease in Rheumatic Disorders within Palestinian patients between 2022-2024, A Retrospective Cohort study**Malak R. Hroub¹¹ Al-Quds University, Jerusalem, Palestine

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLHqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=6&t=2939s>

Background: Rheumatologic and cardiovascular conditions are major causes of morbidity and mortality. Recent research has shown a close association between them. As cardiac manifestations in the Palestinian population remain uncharacterized, the current study aims to investigate the proportion of cardiac manifestations in rheumatologic disease patients from Palestine and to determine the factors associated with these manifestations.

Methods: A retrospective cohort was conducted on rheumatology patients, at Al-Makassed Hospital from 2022 to 2024. Data was collected from electronic records for 296 patients. Cardiovascular manifestations were recognized through echocardiography and consultation reports. Analysis using SPSS version 26 was performed to determine the association between patients' characteristics and the cardiac manifestations.

Data included demographics (age, gender), previous chronic diseases; especially regarding rheumatologic condition; age at diagnosis; cardiac manifestations; imaging reports, laboratory information, lipid profile, comorbidities and risk factors.

Results: Of the 296 patients, 71.6% were females, with an average age of 49.2 ± 15.5 years. The most common rheumatic diseases were seronegative spondyloarthritis (25.1%), rheumatoid arthritis (RA) (18.1%), and systemic lupus erythematosus (SLE) (11.1%). The proportion of clinically recognized cardiac disease was 17.9%; whereas 16.6 percent of participants had obesity and 9.8 percent had an addiction to cigarettes. Among comorbidities other than rheumatologic diseases, hypertension (30.4%) and diabetes mellitus (19.9%) were the most common. Cardiac disease was significantly associated with older age, diabetes mellitus, hypertension, coronary artery disease, positive troponin, and positive CK-MB ($p < 0.05$). Meanwhile, no significant associations with gender, specific rheumatic conditions, or lipid profile were observed.

Conclusion: This is the first research from Palestine that studies cardiac involvement and its burden on rheumatology patients. The study identified seronegative spondyloarthritis, rheumatoid arthritis, and systemic lupus erythematosus as the predominant rheumatological diseases, with an average age of diagnosis at 45 years. Hypertension, diabetes, and cardiac disease were commonly

observed comorbidities. This population exhibits a heightened risk of subclinical myocardial injury with increasing age.

Integrated cardio-rheumatology care is advocated to support screening, risk assessment, and management of these patients; as systemic inflammation, seropositivity, and long disease duration play a dominant role in cardiovascular risk, especially in populations with low proportion of traditional risk factors (e.g.: smoking). This underscores the importance of integrating inflammatory markers and serologic status into CVD risk assessment tools for rheumatology patients. Furthermore, given the potential for subclinical myocardial injury, incorporating biomarkers such as CK-MB and troponin into routine monitoring may enable earlier detection of cardiac involvement. Future research in regional populations should aim to refine screening protocols—potentially including periodic echocardiography, carotid ultrasound, and biomarker testing— and guide preventive interventions.

There's also a need for studies examining the effects of disease-modifying treatments on cardiovascular disease outcomes in patients with at-risk rheumatic diseases, studies employing early intervention techniques of anti-atherosclerotic drugs such as aspirin, statins, and angiotensin converting enzyme inhibitors in patients with diseases such as SLE and RA. And large-scale, population-based research is needed to specify the prevalence and patterns of cardiovascular manifestations in regional population.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

3RD PLACE FOR BEST ORAL PRESENTATION AT THE WCMSR ORIGINAL RESEARCH BASED ON JUDGE SCORE.

ORIGINAL RESEARCH

22. Effectiveness of Haptic Feedback Devices in Reducing Pain Perception During Intra-Articular Corticosteroid Injections in Rural Guatemala and Kenya

Tyler Perleberg,¹ Alfeil Felipe,¹ Carmen Tong,¹ Jordan Konstanty,¹ Gautam Desai.¹

¹ Kansas City University College of Osteopathic Medicine, USA

https://www.youtube.com/watch?v=hJcJ1w8oM&list=P_LhqNg3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=13896s

Background: Osteoarthritis (OA) is the most common joint disease worldwide and a leading cause of disability, affecting most individuals by age 65 due to cartilage degradation, eburnation, osteophyte formation, and inflammation. Intra-articular corticosteroid injections (IACIs) are widely used for moderate to severe OA and are especially beneficial in low-resource areas where long-term medications and physical therapy may be inaccessible. However, IACIs can induce substantial pain and anxiety, particularly when anesthetics or imaging guidance are unavailable. Haptic feedback, such as tactile stimulation through handheld vibration devices, has demonstrated the ability to modulate pain perception in clinical settings. As a simple, low-cost method, it may offer a non-pharmacologic option to reduce procedural discomfort in environments where pain control measures are limited. This study evaluates the effectiveness of handheld vibration devices in reducing pain perception during IACIs in rural Guatemala and Kenya.

Aim: To assess whether handheld vibration devices reduce pain perception during intra-articular corticosteroid injections in patients with osteoarthritis in resource-limited health settings.

Methods: A randomized controlled study was conducted during Kansas City University's Global Health Outreach programs in Guatemala and Kenya. 37 adult patients with OA of the knee (89%), hand (8%), or shoulder (3%) scheduled for IACIs were enrolled; four were excluded due to protocol deviations or incomplete data, resulting in a final sample of 33 participants. Subjects were randomized 1:1 into a control group (standard care) or a haptic group that held a vibration device (Beurer MG10) in the contralateral hand during the injection. Pain perception was assessed using the Wong-Baker FACES Pain Rating Scale before and after the procedure. Statistical analysis was performed using Mann-Whitney and Wilcoxon Signed Rank tests.

Results: No statistically significant difference was found between the control and haptic feedback groups in post-injection pain scores ($p = 0.058$). However, the majority of participants experienced significantly lower actual pain than expected (Haptic = 76.5%, Control = 62.5%),

with only two reporting increased pain and seven reporting no change. Pain scores decreased by an average of 4.047 points overall ($p < .001$), with reductions of 3.217 in the control group ($p = .001$) and 2.727 in the haptic group ($p = .006$). The average post-injection pain score was 1.44 for the control group and 2.35 for the haptic group.

Conclusion: Although handheld vibration devices did not significantly reduce pain perception compared to standard care during IACIs, a higher proportion of patients in the haptic group reported less pain than expected. Participants experienced significantly less pain than anticipated, suggesting that factors such as patient reassurance, procedural familiarity, or clinical environment may play a larger role in pain modulation. Limitations included communication barriers despite translator and language support, procedural variability among injectors, and an imbalance in joint types treated, with most injections administered to the knee. Nonetheless, this study highlights the feasibility of implementing low-cost, non-pharmacologic strategies like haptic feedback in resource-limited settings. Further investigation with a larger sample size and standardized technique is warranted to explore the role of haptic feedback in reducing procedural pain in low-resource environments.

Table 1. Comparison of Pain Outcomes Between Haptic and Control Groups

Group	Participants	Avg. Post-Injection Pain	# with Lower Pain than Expected	% with Lower Pain than Expected	Average Decrease in Actual Pain
Haptic	17	2.35	13	76.47	3.217
Control	16	1.44	10	62.50	2.727

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

23. Effectiveness of Trimethoprim-Sulfamethoxazole in Cyclosporiasis: A Meta-analysis of Randomized Clinical Trials

Sofía Bermúdez Rodríguez¹, Luis Felipe Mosquera Solano¹, Daniela Agudelo Torres¹, Filippo Furlanetto¹, Jorge Enrique Gomez Marin¹

¹ Faculty of Health Sciences, University of Quindío, Colombia

https://www.youtube.com/watch?v=hJicU1w8oM&list=P_LhqNq3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=15773s

Introduction: Cyclosporiasis, caused by *Cyclospora cayetanensis*, is an intestinal infection transmitted via contaminated food and water and is responsible for at least 10% of diarrheal episodes in children aged 0-4 years in endemic regions. Clinically, it manifests as watery diarrhea, fever, and fatigue, posing significant public health challenges because of its association with foodborne outbreaks and the resultant healthcare costs. The primary treatment regimen involves trimethoprim-sulfamethoxazole (TMP/SMX); however, no meta-analysis has validated its use.

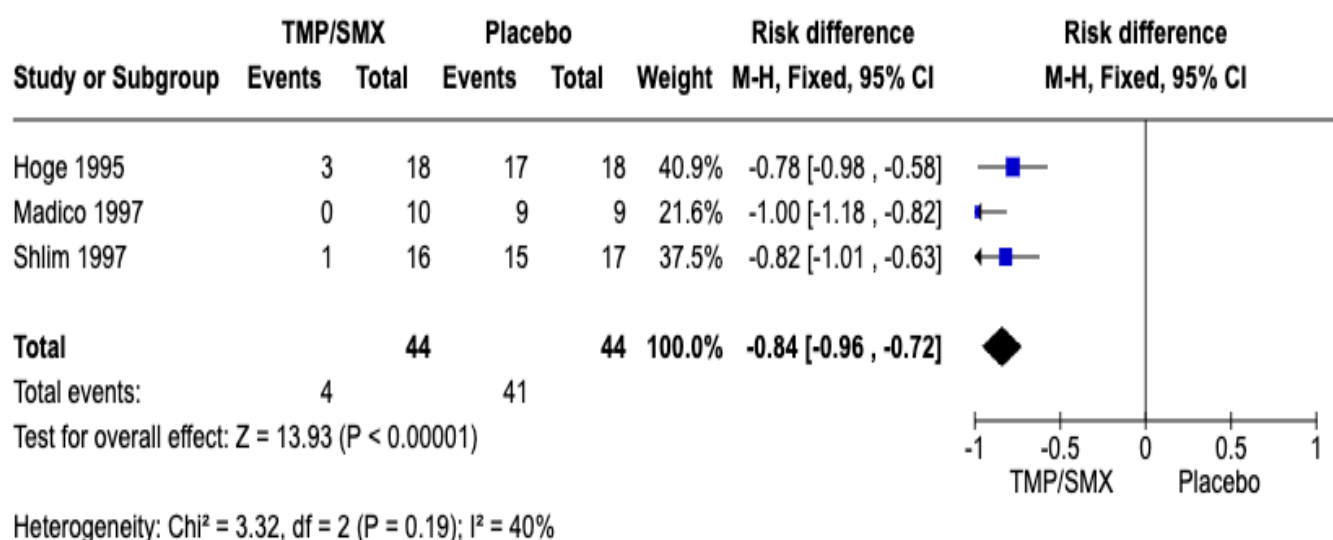
Objective: We performed a meta-analysis to evaluate the efficacy of TMP/SMX compared to placebo for the eradication of oocysts and clinical resolution of cyclospora, drawing on data from randomized controlled trials (RCTs).

Methods: A comprehensive search was performed in PubMed, Scopus, and Google Scholar until May 2025. The studies deemed eligible were randomized controlled trials (RCTs) that included confirmed diagnoses and clinical or laboratory assessments conducted seven days following treatment. The methodological quality of the studies was evaluated using Cochrane's Risk of Bias 2 (RoB 2) tool. Risk differences (RD) with 95% confidence intervals (CI) were calculated using a random-effects model.

Results: Among the 19 studies identified, only three were randomized controlled trials, encompassing 88 patients. The oocyst eradication rates with TMP/SMX ranged from 83% to 100%, in contrast to the persistent infection observed in the placebo group. The reported risk difference (RD) values were -1.00 (Madico et al.), -0.78 (Hoge et al.), and -0.82 (Shim et al). The heterogeneity was moderate, with an I^2 value of 40%. The risk of bias was low for Hoge et al., moderate for Shim et al., and high for Madico et al.

Conclusion: The present meta-analysis demonstrated that TMP/SMX exhibits significant efficacy in eradicating *Cyclospora cayetanensis* and improving clinical outcomes compared to placebo, thereby supporting its designation as the preferred treatment for *Cyclospora* infection. However, the evidence is constrained by the limited number and variable quality of existing trials, underscoring the necessity for larger, high-quality randomized controlled trials (RCTs) to reinforce the therapeutic recommendations.

Figure 1. Forest plot of studies included in the meta-analysis.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE REPORT**24. Amyloidosis – a rare complication of long-evolving rheumatoid arthritis. A case report**

Irina Maria Rusu¹, Rebeca-Ioana Rus¹, Maria-Cristina Simian¹,
Daria Șerbănescu¹, Laura Muntean¹

¹ "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

 https://www.youtube.com/watch?v=hJicU1w8oM&list=P_LhqNg3xJCibafO0Y5bvBcgMmXpgzJxd44&index=5&t=1380s

Background: Amyloidosis consists of a diverse spectrum of medical conditions, defined by the accumulation of fibrillar proteins in a beta-sheet configuration in different tissues. Reactive amyloidosis (AA), previously known as secondary amyloidosis, can appear as a complication of chronic inflammatory diseases, such as rheumatoid arthritis. In present times, the use of biological therapies has decreased its prevalence, but it remains a considerable threat for patients, as its main target is the kidney, with progression towards renal failure. Light chain amyloidosis (AL) is a primary form of the disease, involving plasma cell clones in the bone marrow, and has been reported in patients with rheumatoid arthritis, constituting an important differential diagnosis. Herein, we present the case of AA amyloidosis in a patient with a long evolution of rheumatoid arthritis, highlighting its diagnostic difficulties.

The Case: A 55-year-old woman presented to our clinic with mild arthritic pain in the hands, fatigue and hyperpigmentation on the dorsal side of her forearms, associated with itching. Rheumatoid arthritis is present in her medical history, having been diagnosed 15 years prior. Her medication included Metotrexate for three years, interrupted due to digestive intolerance, followed by Sulfasalazine to the current presentation. Physical exam highlighted obesity, the skin lesions on the forearms and a positive Gaenslen sign bilaterally. Biologically, an important inflammatory syndrome was discovered, alongside a very high rheumatoid factor (FR). These have been persisting for a number of years, prompting several past investigations to identify its cause. A serum protein electrophoresis with immunofixation was negative for monoclonal bands, but serum light chains kappa and lambda were slightly elevated. Histopathological analysis of a biopsy from abdominal fat revealed apple-green birefringence in polarized light with Congo red staining, leading to the diagnosis of amyloidosis. Infection and cancer were ruled out after extensive investigations. Taking into account the lack of renal manifestations, the relatively poorly controlled rheumatoid arthritis and the very slight elevation of serum light chains, this was interpreted as reactive amyloidosis. Treatment was promptly switched to Leflunomide and the patient will be evaluated for treatment with anti-TNF biological therapies.

Conclusion: Amyloidosis can constitute a life-threatening complication to long-evolving chronic inflammatory diseases, such as rheumatoid arthritis. As no therapies that target amyloidosis specifically are available as of yet, management involves strict control of the underlying inflammatory condition, making early detection

critical. This case highlights the diagnostic challenge this rare complication poses, as AL amyloidosis might also be considered, and the importance of controlling rheumatoid arthritis both clinically and biologically, in order to prevent its development.

Table 1: Laboratory Results at First Day of Hospitalization

Parameters	Unit	Value	Reference values
C-reactive protein	mg/dL	8.37	< 0,5
Rheumatoid Factor	UI/mL	140.2	< 14
Erythrocyte sedimentation rate	mm/h	67	< 30
Serum light chain lambda	mg/L	28.4	5.71 - 26.3
Serum light chain kappa	mg/L	34.62	3.3 - 19.4

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



CASE REPORT**25. Left Colo-renal Fistula in an Elderly Female: Case Report**Juan J. Velez-Posada¹, Wilson S. Peñafiel-Pallares¹¹Universidad de las Americas, School of Medicine, Quito Ecuador

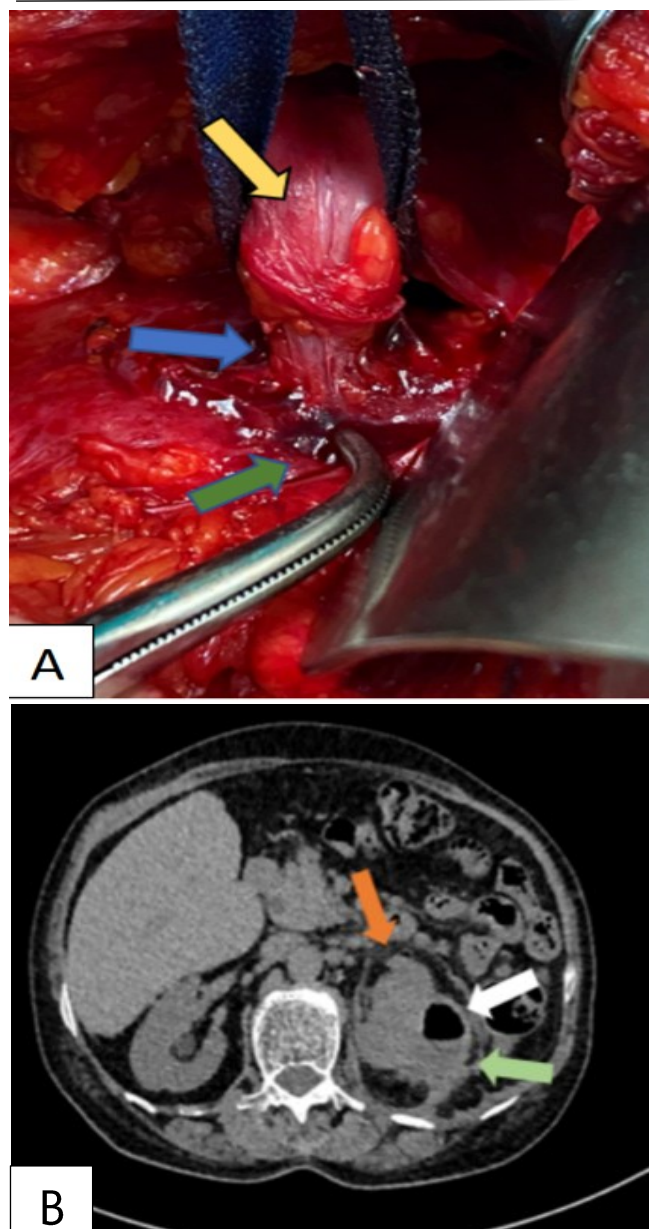
▶ <https://www.youtube.com/watch?v=hJicJ1w8oM&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=12182s>

Background: Colo-renal fistulas are rare entities, with very few cases reported worldwide and no established prevalence. Left-sided fistulas are the most frequent reno-intestinal communications. They usually result from chronic inflammation, diverticular disease, or necrotic processes. However, colo-renal fistulas caused by an abscessed renal cyst are exceptionally uncommon. This case highlights a rare presentation in an elderly female and underscores the importance of considering fistulous complications in patients with complicated renal cysts.

The Case: An 82-year-old female, history of high blood pressure, diverticulitis, left renal cyst classified as Bosniak II F–III was admitted for a scheduled cystectomy. She presented with progressive low back pain, asthenia, unintentional weight loss, pneumaturia, fecaluria and sustained a fall from standing height during hospitalization. No additional medical history was noted. Follow-up abdominal CT revealed findings suggestive of emphysematous pyelonephritis, an infected left renal cyst, and a small communicating tract between the left kidney and the splenic flexure of the colon. Exploratory left lumbotomy confirmed the colo-renal fistula. The patient was managed by a fistulectomy, and drainage of the abscessed renal cyst was performed, followed by placement of a Jackson-Pratt drain. Postoperative recovery was favorable, with resolution of pain and no recurrence at 6 months-follow-up.

Conclusion: This case illustrates an unusual cause of colo-renal fistula, secondary to rupture and infection of a renal cyst after trauma. Given its rarity and nonspecific presentation, early suspicion based on imaging and clinical findings is critical. Management requires a multidisciplinary surgical approach in a tertiary care setting. To our knowledge, this is one of the few reported cases of a colo-renal fistula associated with an abscessed renal cyst, contributing to the limited body of literature on this rare condition.

Figure 1. Intraoperative Photograph: Dissection and Visualization of the Right Vagus Nerve.



Legend: (A) Left renal cyst with purulent content already drained, left colonic-renal fistula (blue arrow), splenic flexure of the colon (yellow arrow), and left renal cyst (green arrow). (B) Axial uro-CT demonstrating air surrounding the left renal parenchyma (white arrow), inflammation of Gerota's fascia (orange arrow) and pararenal tissue (green arrow), as well as multiple diverticular-appearing masses in the colon. The left kidney appears enlarged and emphysematous, with associated inflammatory process involving Gerota's fascia, the lateroconal fascia, and Zuckerkind's fascia.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

CASE REPORT**26. Primary Intestinal Lymphangiectasia Presenting as Chylous Ascites in a Young Female: A Rare Case**

Basheer Babaa¹, Malak R. Hroub¹, Yousef Habes¹, Maha Ramzi¹, Omar H. Salloum¹, Abdallah Dwayat¹

¹ The Faculty of Medicine, Al-Quds University, Jerusalem, Palestine

 https://www.youtube.com/watch?v=hJicJ1w8oM&list=P_LhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=5&t=9821s

Background: Primary intestinal lymphangiectasia (PIL) is a rare condition that occurs due to the pathological dilation of intestinal lymphatics, characterized by protein losing enteropathy, and occurs more commonly in children. Adults' occurrence is less common, and misdiagnoses with other gastrointestinal disease is prevalent because of the overlapping and nonspecific features.

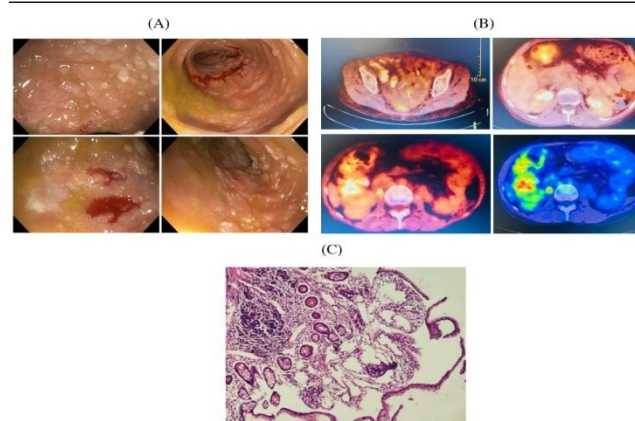
The Case: A 28-year-old female presented with recurrent abdominal distension and chylous ascites requiring therapeutic paracentesis over the past three years. Medical history was notable for 7 years of diffuse recurrent intermittent crampy abdominal pain more prominent periumbilical and at the right lower quadrant, bloating, loose stools, and weight loss, raising suspicion for Crohn's disease, however, no supportive findings were noted on colonoscopy or histopathology, despite this, she was treated as a case of Crohn's for a short period, but the absence of progression and the new-onset chylous ascites prompted reconsideration of the diagnosis and further investigation into alternative causes of protein-losing enteropathy and ascites.

At presentation, the patient denied fever, night sweats, diarrhea, or overt gastrointestinal bleeding. An abdominal examination showed distention with shifting dullness, consistent with ascites. Without peripheral edema, lymphadenopathy, or hepatosplenomegaly. Laboratory investigations were significant for low serum albumin level of 2.3 g/dL. Ascitic fluid was sterile, and negative for malignant cells. A PET-CT scan was ordered to exclude occult malignancy, autoimmune, inflammatory, or metabolically active conditions. Abdominal CT imaging revealed diffuse thickening of the hepatic flexure of the colon, associated mesenteric fat stranding, and lymphadenopathy (largest node 1.5 cm), in addition to moderate-volume ascites, these findings alongside the clinical picture have raised suspicion for a lymphatic telangiectasia; the patient was started on budesonide and long-acting octreotide (Sandostatin LAR 20 mg intramuscularly every 28 days). She showed clinical improvement following therapy, with reduction in abdominal distension and decreased need for paracentesis. Endoscopic evaluation (Figure 1) demonstrated multiple white plaques in the duodenum on upper endoscopy. Histopathologic examination of the duodenum and ileum was most consistent with primary intestinal lymphangiectasia and revealed lymphatic dilation with preserved villous architecture. No parasites, granulomas, dysplasia, or malignancy were noted.

Conclusion: PIL is rare in adults and can mimic other gastrointestinal disorders, leading to delayed diagnosis. Diagnosis relies on

histopathologic confirmation and exclusion of secondary causes. Dietary management is the cornerstone of treatment, with adjunctive therapies reserved for refractory cases. Our patient's diagnostic journey underscored several critical knowledge gaps that continue to challenge clinicians managing intestinal lymphangiectasia. Despite presenting clinical and biochemical features suggestive of the disease, the absence of standardized approaches to quantify lymphatic dysfunction made it difficult to objectively assess disease burden or monitor response to therapy. This case reflects broader gaps in our understanding of the disease's natural history, particularly in adult-onset presentations, which remain poorly characterized. The clinical heterogeneity observed across patients suggests that individualized diagnostic and therapeutic strategies are urgently needed. Continued research is essential to uncover the underlying mechanisms driving variability in presentation and treatment response and ultimately guide the development of more targeted, personalized care.

Figure 1: Medical Image Panel: Endoscopy, PET/CT, and Histopathology Findings.



Legend: (A) Upper gastrointestinal endoscopy showing multiple white plaques in the duodenum, suggestive of lymphatic dilation. These mucosal changes were most prominent in the second part of the duodenum and raised initial concern for infiltrative or lymphatic pathology. (B) Whole-body PET/CT scan demonstrating diffuse FDG uptake in the jejunum, ileum, ascending colon, and proximal transverse colon, consistent with hypermetabolic bowel wall thickening. No discrete focal lesion or metabolically active lymphadenopathy was identified. (C) Terminal ileum biopsy shows dilated lymphatic channels (H&E, 20x)

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://open.library.pitt.edu/)

Pitt Open Library Publishing

CASE REPORT**27. A Case of Rosai-Dorfman Disease**

Montasir Ahmed¹, Karma¹, Forhad¹, Parvat¹, Nuyama Rai¹, Anushila¹

¹ The TMSS Medical College, Bogura, Bangladesh

▶ https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=15180s

Background: Rosai-Dorfman Disease (RDD) is a rare form of histiocytosis. We have observed extralymphatic involvement in about 43% of RDD cases in the literature, while dermatological symptoms manifest in only about 10% of cases. We present a case of RDD characterized by both nodal and extranodal involvement, initially presenting with bilateral ear nodules and dyspnea that closely resembled the clinical features of relapsing polychondritis; unfortunately, the diagnosis was missed at first. This case highlights the necessity for greater awareness and education among healthcare professionals regarding RDD to do diagnosis and treatment.

Case Report: A 25-year-old lady had a one-year history of discomfort and swelling in the cartilaginous part of the ears, accompanied by dyspnea (MRC dyspnea scale 2). A clinical diagnosis of relapsing polychondritis was made by an ENT surgeon, and oral steroids and NSAIDs were given. An inhaler containing salbutamol was also prescribed. The symptoms progressively worsened, her left ear became more swollen, dyspnea worsened (MRC dyspnea scale 3), she also developed bilateral cervical lymphadenopathy, and she presented to the medicine OPD. The examination revealed bilateral enlargement of the ear helices, resembling a cauliflower-like appearance (Figure 1). This time, FNAC from the left ear and a biopsy of the cervical lymph node were done, and they showed proliferation of histiocytes. Most of the histiocytes have abundant foamy cytoplasm and prominent nucleoli. These cells were found admixed with plasma cells with Russell bodies, lymphocytes, and neutrophils. Histiocytes showed features of emperipolesis. Fibrosis with a vague storiform pattern is present. These morphologic features are compatible with RDD. Routine laboratory investigations were normal. Serologies for antinuclear antibody (ANA) were positive (16.5 U/mL), and anti-dsDNA was negative. Spirometry revealed an obstructive pattern with a forced expiratory volume in one second (FEV1) of 3.2 L (50% of the predicted value). Computed tomography of the chest revealed bilateral hilar lymphadenopathy. Investigations concerning sarcoidosis and tuberculosis were negative. A watchful waiting strategy was taken as a management plan with medications of oral methotrexate and a salbutamol inhaler.

Conclusion: RDD is a rare non-Langerhans cell histiocytosis that commonly presents with significant lymphadenopathy and may or may not have systemic symptoms. The disease may affect almost every organ system, mimicking different clinical conditions. Frequently afflicted areas include the nasal cavity and sinuses, gastrointestinal, pulmonary, renal, musculoskeletal, and genitourinary

systems, and, less frequently, the skin. FNAC or tissue biopsies are needed to diagnose RDD, and they commonly show extensive, pale histiocyte infiltrates with intact intracytoplasmic lymphocytes, which is known as emperipolesis. Histological features help diagnose this condition and separate it from other histiocytic illnesses. Medical literature inadequately describes the prognosis of RDD. In certain cases, a lengthy clinical course might lead to spontaneous remission. Multifocal illness, vital organ involvement, and a big mass worsen prognoses. No guideline on RDD management exists due to its rarity, making standardized therapy difficult. Knowing the clinical and histological presentations of RDD is crucial for accurate diagnosis, as it often mimics other disease conditions. Research is needed to determine the potential treatments.

Figure 1: Bilateral Cauliflower-Like Appearance of the Ears.



This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE REPORT**28. One Step Forward, Two Steps Back: Functional Decline following Lisfranc Fracture-Dislocation**Nasrin Ahmed¹¹ Anglia Ruskin University, London, United Kingdom

https://www.youtube.com/watch?v=hJcJ1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=16509s

Background: What once was managed through foot amputations has now evolved from a surgical sentence to a joint-sparing breakthrough in modern orthopaedics. Though rare, Lisfranc injuries pose devastating consequences as they are associated with poor functional outcomes and high rates of disability. Lisfranc injuries continue to test clinicians with its subtlety and complex biomechanics.

The Case 24-year-old male sustained a Lisfranc fracture-dislocation during Brazilian jiu-jitsu training when his left foot was held in plantarflexion and abruptly subjected to axial-load. Initial weight-bearing radiographs demonstrated classic widening between the 1st and 2nd metatarsal bases ("fleck sign"), lateral displacement of the 2nd metatarsal, and subluxation of the tarsometatarsal joints, confirming ligamentous disruption. CT scans further detailed the fracture-dislocation. The surgical team debated between primary arthrodesis versus open reduction and internal fixation (ORIF). Given the patient's age and fitness, he underwent urgent closed reduction followed by ORIF using multiple cannulated screws and a dorsal bridge plate. A follow-up X-ray showed improved alignment, but the patient reported ongoing pain despite 12 months of physiotherapy. Everyday activities like walking and standing for extended periods became difficult, impacting his mental health. He later opted for a second surgery to remove the hardware. Though this offered partial relief, he continues to suffer from stiffness and pain.

Conclusion: Even with timely surgical repair, Lisfranc injuries are physically taxing to recover from, often leading to life-altering functional limitations as they are associated with arch collapse and posttraumatic arthritis. Improving access to specialist care is essential to promote midfoot stability and prevent long-term disability.

Figure 1. Left Foot X-ray (Oblique and Dorsoplantar Views)

Legend: Preoperative Radiographs Demonstrating Lisfranc Fracture-Dislocation Anteroposterior and oblique radiographic views of the left foot demonstrating a Lisfranc injury, characterized by displacement between the first and second metatarsal bases and malalignment of the tarsometatarsal joints. Note the diastasis and instability at the midfoot region, with the cursor pointing at the "fleck sign" – consistent with a fracture-dislocation pattern.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

**1ST PLACE FOR HIGHEST SCORE DURING THE
ABSTRACT REVISION PROCESS FOR CASE REPORTS.****CASE REPORT****29. Aggressive Gallbladder Carcinoma in Down Syndrome
Patient: A Rare Presentation**

Basheer Babaa¹, Malak R. Hroub², Lana M.A Jamal²,
Salahaldeen Deeb², Khaled Alhashlamon,² Izzeddin A. Bakri.³

¹Al-Najah National University Hospital, Nablus, Palestine

²Al-Quds University, Jerusalem, Palestine

³Departamento de Patología - Hospital Ahli, Palestine



https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=5&t=4485s

Background: Gallbladder carcinoma in individuals with Down syndrome (DS) is exceedingly rare, literature reports only a handful of cases. Risk factors include cholelithiasis, chronic inflammation, biliary helicobacter pylori colonization, chromosomal instability and cytogenetic abnormalities of chromosome 21.

The Case : A 45-year-old male with a history of Down syndrome, presented to the emergency department complaining of moderate epigastric pain for 3 days, 5 days of yellowish skin discoloration, and 2-weeks of postprandial nausea and vomiting of undigested food. There was no history of dysphagia, anorexia, bowel habit changes, or gastrointestinal bleeding. Family and drug history is unremarkable. On examination, the patient had a distended abdomen, jaundice, mild epigastric tenderness, and a palpable bulge in the right upper quadrant.

Laboratory findings over repeated evaluations revealed persistently elevated inflammatory markers, direct hyperbilirubinemia, hypocalcemia, mild anemia with decreased hematocrit level, and hypoalbuminemia. Liver and pancreatic enzymes were unremarkable. On ultrasound, moderate-to-severe ascites were noted. MRI abdomen showed a large exophytic hepatic mass (9 × 7.5 × 7.3 cm) in segment VI encasing and compressing the gallbladder, with multiple smaller hepatic lesions (0.2–2.3 cm) and enlarged multilobular speculated periportal/mesenteric lymph nodes measuring up to 4.3 cm in diameter, 3.3 cm right adrenal lesion and asymmetric thickening of the ascending colon. Findings were suspicious for metastatic malignancy with gallbladder involvement. Colonoscopy was performed and revealed grossly normal mucosa; histopathology was unremarkable.

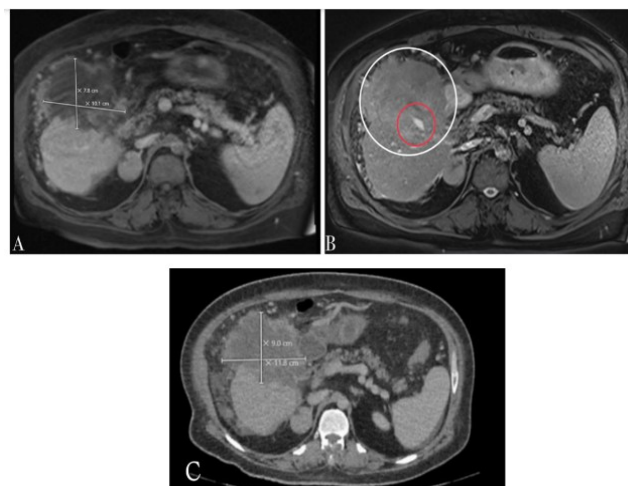
A triphasic CT scan confirmed metastatic disease; and hyperbilirubinemia was explained by hepatocellular invasion rather than obstructive cholestasis.

Echocardiography was significant for moderate pulmonary hypertension. Histopathological exam of a core biopsy of the liver lesion revealed moderately differentiated adenocarcinoma, consistent with gallbladder carcinoma with hepatic metastases. The

patient was admitted for supportive and symptomatic management. He was kept nil per os (NPO) and started on intravenous fluids, proton pump inhibitors, broad-spectrum antibiotics, analgesics, anticoagulation, and diuretics. Ursodeoxycholic acid and hydrocortisone were added later in the course. Despite escalation of therapy, the patient developed clinical deterioration with ascites and worsening jaundice, requiring transfer to the intensive care unit. During the ICU stay, the patient received supportive medications including ranitidine, famotidine, potassium chloride, calcium gluconate, and phytomenadione (vitamin K) as part of correction of electrolyte disturbances, gastric protection, and coagulopathy management, however, after few months, the patient died.

Conclusion: Our report adds to the scarce evidence by documenting an older age at presentation, establishing histopathological confirmation, and demonstrating even more extensive systemic spread at diagnosis. This case highlights the tendency for late presentation with disseminated disease and limited therapeutic options, underscoring the aggressive course of gallbladder carcinoma in DS. Collectively, these observations reinforce the importance of maintaining a high index of suspicion in DS patients presenting with hepatobiliary symptoms and support the consideration of earlier imaging and potentially screening approaches in this high-risk population. The low number of reported cases may reflect underdiagnosis or early mortality from other conditions. Larger prospective studies are needed to clarify the true incidence, evaluate screening strategies, and improve outcomes.

Figure 1. Abdominal Imaging Panel: MRI and CT of Hepatic Mass.



Legend (A) MRI showing the large exophytic hepatic mass measuring: (10.1 × 7.8 cm). (B) T2 Weighted MRI Hepatic mass in segment VI (big circle) encasing and compressing the gallbladder (small circle). (C) Triphasic CT scan showing a large hepatic mass (9 × 11.8 cm) invading surrounding structures.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://open.library.pitt.edu/)

Pitt Open Library Publishing

2ND PLACE FOR HIGHEST SCORE DURING THE ABSTRACT REVISION PROCESS FOR CASE REPORTS.

CASE REPORT

30. Avoiding Pacemaker: Resolution of Sinus Node Dysfunction through CPAP Therapy

Rebeca-Ioana Rus¹, Irina-Maria Rusu¹, Maria Cristina Simian¹, Bogdan Valentin Roznovan¹, Paula Cornelia Gocan²
Napoca, Romania

² Niculae Stăncioiu Heart Institute

https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=5&t=14584s

Background: Sleep apnea-hypopnea syndrome (SAHS) is a common yet underdiagnosed sleep-related breathing disorder with significant cardiovascular implications. Besides hypertension, heart failure, and ischemic disease, SAHS has been increasingly associated with arrhythmias and conduction abnormalities. Sinus node dysfunction (SND) is among the rhythm disturbances most frequently reported, with clinical manifestations ranging from bradycardia to prolonged sinus pauses. The pathophysiology involves recurrent nocturnal hypoxemia, sympathetic-vagal imbalance, and intrathoracic pressure fluctuations, which together promote electrical instability. Traditionally, pacemaker implantation has been considered the treatment of choice for symptomatic or severe SND. However, growing evidence suggests that adequate management of SAHS with continuous positive airway pressure (CPAP) may reverse rhythm disorders, highlighting the importance of identifying reversible causes before committing to invasive procedures.

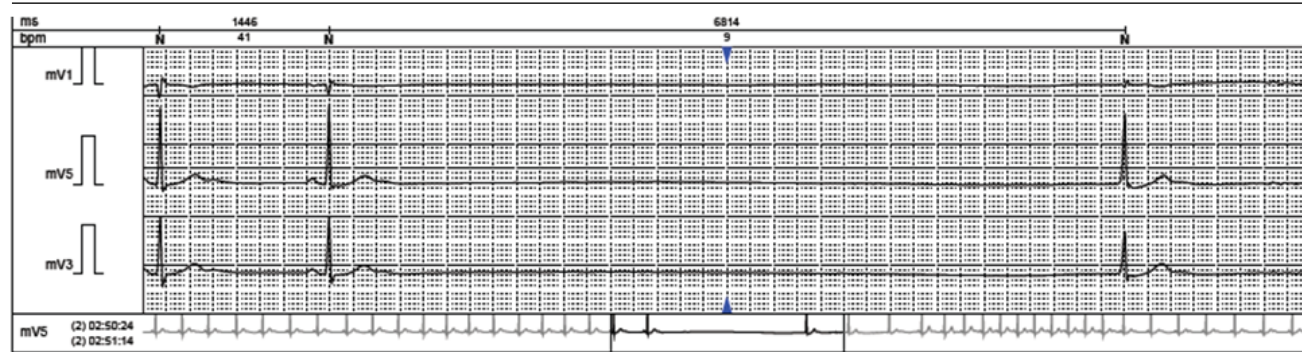
The Case: We report the case of a 34-year-old man with morbid obesity (BMI 43.6) and no cardiovascular history, who presented with severe daytime sleepiness (Epworth score 17). Physical examination

was unremarkable, with no structural heart disease. Baseline electrocardiogram showed sinus bradycardia at 56 bpm. Holter monitoring revealed sinus node dysfunction with nocturnal pauses up to 6.8 seconds. Based on these findings, dual-chamber pacemaker implantation was initially considered. Simultaneous overnight polysomnography confirmed severe SAHS, with an apnea-hypopnea index (AHI) of 70 events/hour, oxygen desaturation index of 52/hour, and a nadir oxygen saturation of 56%. Given the temporal overlap between apneic events and sinus pauses, an alternative strategy was pursued. The patient was started on CPAP therapy and received weight loss counseling.

At one-month follow-up, he reported complete resolution of daytime symptoms. Repeat polysomnography demonstrated significant improvement, with AHI reduced to 38/hour, desaturation index to 19/hour, and minimum O₂ saturation improved to 70%. Holter monitoring confirmed normalization of sinus rhythm, with a mean heart rate of 68 bpm and no further pauses. Pacemaker implantation was therefore avoided.

Conclusion: This case highlights the complete reversibility of sinus node dysfunction after treatment of severe SAHS with CPAP therapy. It underscores the need to systematically consider sleep-disordered breathing in patients with unexplained bradyarrhythmias, particularly in younger individuals without cardiac comorbidities. Identifying SAHS as an underlying cause may dramatically alter the therapeutic strategy, preventing unnecessary device implantation and its long-term complications. Beyond improving quality of life, CPAP should be recognized as a potential disease-modifying therapy for rhythm disturbances. Early screening, accurate diagnosis, and prompt initiation of noninvasive ventilation may represent a decisive step in redefining the management of SND in the context of sleep apnea.

Figure 1. Night Time Pause of 6,8 s. (the Pause was Preceded by Apnea for 52 Seconds and O₂ Saturation Decrease to 56%).



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing

CASE REPORT**31. Silent Splenic Crisis in an Immunocompetent Adolescent: A Case Report of Multifocal Splenic Abscess with Subcapsular Extension and Paradoxical Leukopenia Managed Conservatively**Amit Kumar¹, Shweta Tanwar², Yogeshwaran Mohan¹, Aman Dubey¹,¹ Department of Internal Medicine, ESIC Postgraduate Institute of Medical Sciences and Research, New Delhi, India² Indian Council of Medical Research, New Delhi, India

https://www.youtube.com/watch?v=hJcU1w8oM&list=P_LhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=5301s

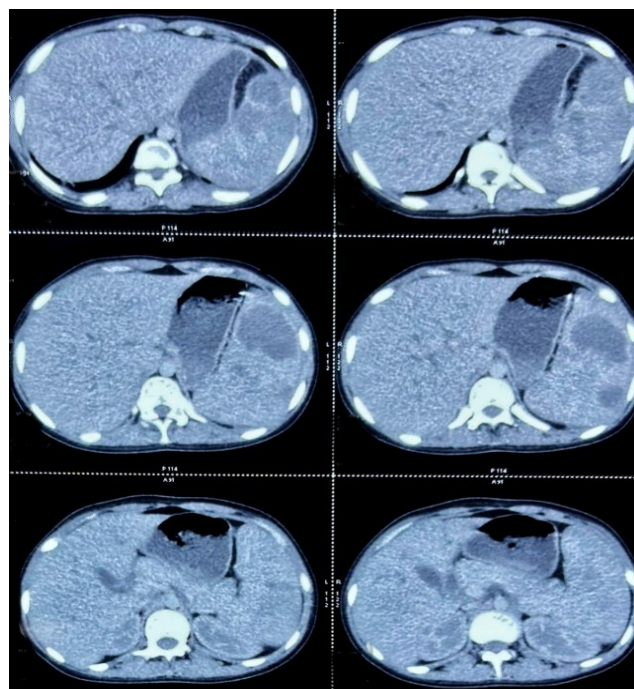
Background: Primary splenic abscess is a rare clinical entity, with a reported incidence ranging from 0.05% to 0.70%, and is especially uncommon in immunocompetent individuals. The spleen's robust phagocytic and immunological functions generally confer protection against microbial invasion. Most splenic abscesses are secondary to hematogenous seeding, frequently in the setting of infective endocarditis, immunosuppression, diabetes, trauma, or intravenous drug use. The clinical presentation is often vague, with the classic triad of fever, left upper quadrant (LUQ) pain, and leukocytosis present in only a minority of cases. The diagnostic challenge is compounded by nonspecific symptoms and frequently sterile blood cultures. Imaging modalities, particularly computed tomography, play a central role in diagnosis. Surgery has long been the main treatment for splenic abscesses, but there's now a growing preference for less invasive options like targeted antibiotics and image-guided percutaneous drainage. However, the optimal treatment approach remains uncertain. Percutaneous drainage can be a useful option in selected cases, but studies have reported high failure rates, ranging from 14.3% to 75%. Moreover, even with advances in imaging and treatment, delayed diagnosis or inadequate treatment carries a high mortality risk. We report a rare case of primary multifocal splenic abscess in a previously healthy 15-year-old immunocompetent female.

The Case: A previously healthy 15-year-old female presented with a 10-day history of high-grade fever and abdominal pain, which localized to the LUQ and became sharp and positional in nature. She had no history of recent infection, immunosuppression, trauma, or chronic illness. Notably, she experienced transient arthralgias and displayed no gastrointestinal or respiratory symptoms. Clinical examination revealed LUQ tenderness and splenomegaly. Laboratory investigations showed profound leukopenia (WBC 2,100/mm³) with neutropenia (ANC 800/mm³) and normocytic anemia (Hb 9.2 g/dL). Procalcitonin was markedly elevated at 8.2 ng/mL, while blood cultures remained sterile. Abdominal ultrasonography and computed tomography revealed an enlarged spleen with multiple hypodense, peripherally enhancing lesions, the largest measuring 53 × 39 × 58 mm, with subcapsular extension and perisplenic fat stranding. Initial empirical therapy with ceftriaxone and metronidazole was ineffective. Ultrasound-guided aspiration yielded 50 mL of pus. Culture of the

aspirate grew *Klebsiella pneumoniae*, prompting escalation of antimicrobial therapy to intravenous meropenem and teicoplanin. Over the next two weeks, the patient showed complete resolution of fever and significant symptomatic relief. She was discharged in stable condition with no complications. Follow-up ultrasonography at one month showed normal splenic architecture and complete resolution of abscesses.

Conclusion: This case emphasizes the importance of maintaining clinical vigilance and early imaging in febrile patients, even in the absence of typical risk factors for deep-seated infections. It demonstrates that conservative management, including image-guided aspiration and targeted antibiotic therapy can be a safe and effective alternative to surgery in selected cases. With timely diagnosis and an individualized treatment approach, it is possible to achieve complete resolution while preserving splenic function and minimizing procedural risks. This case supports the evolving paradigm toward less invasive strategies in managing splenic abscesses, particularly in stable, immunocompetent patients.

Figure 1. Abdominal CT Scan Showing Multiple Splenic Abscesses



Legend: CT imaging of the spleen shows splenomegaly with a craniocaudal dimension of approximately 123 mm. Multiple ill-defined, hypodense, fluid-attenuating space-occupying lesions with peripheral enhancement are present throughout the splenic parenchyma. The largest lesion measures approximately 53 × 39 × 58 mm. Adjacent parenchymal edema is noted, and several lesions extend to the subcapsular region.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing

CASE REPORT**32. Subcutaneous Panniculitis-like T-cell Non-Hodgkin Lymphoma Associated with Cushing Syndrome: An Introspection**

Maria Palfi,¹ Alexandra Zirbo,¹ Cristina Simian,¹ Dávid Kegyes,² Anamaria Bancos,³ Ciprian Tomuleasa.⁴

¹ Fourth-year medical student, "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

² Sixth-year medical student, "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

³ MD, "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania, Institute of Oncology Prof. Dr. Ion Chiricuta, Cluj-Napoca, Romania

⁴ MD, Phd, "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania, Institute of Oncology Prof. Dr. Ion Chiricuta, Cluj-Napoca, Romania

 https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNg3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=9067s

Background: Subcutaneous panniculitis-like T-cell lymphoma (SPTCL) accounts for less than 1% of non-Hodgkin lymphoma cases and is characterized by malignant lymphocyte infiltration into adipose tissues. The term "panniculitis-like T-cells" refers to the histological similarity of the lymphoma cells to the T-cells found in chronic or granulomatous panniculitis. This type of lymphoma is responsible for an ectopic ACTH secretion which leads to excessive cortisol secretion causing Cushing syndrome.

Case: A 45-year-old patient diagnosed with SPTCL in 2022 underwent six cycles of cyclophosphamide, epirubicin, vincristine, and prednisone (CHOP regimen). Due to iatrogenic Cushing syndrome, CHOP was discontinued, and two cycles of rituximab-ifosfamide-carboplatin-etoposide (R-ICE) were administered. In 2023, the patient presented with scleral jaundice and dark urine. Laboratory findings revealed a total bilirubin of 11.2 mg/dL, leukopenia, thrombocytopenia, hyperfibrinogenemia, and elevated D-dimers. A CT scan showed hepatic and iliopsoas muscle lesions, indicating systemic dissemination and relapse of the lymphoma.

Conclusion: Corticosteroid-based regimens are standard treatment options for SPTCL. However, paraneoplastic syndromes such as ectopic ACTH secretion by malignant cells may lead to excessive cortisol levels, exacerbated by corticosteroids. Due to iatrogenic Cushing syndrome induced by the first-line therapy and relapse following second-line options, off-label venetoclax, an apoptosis inducer, was initiated in combination with ropeginterferon alfa-2b. The patient achieved complete remission. No SPTCL cases treated with venetoclax have been published in the literature. We report high efficacy of off-label venetoclax in a relapsed SPTCL with no other available therapeutic option.

Table 1. Hematology and Blood Smear Cytology Results.

Hematologie			Citologie frotiu sanguin		
Test	Rezultat	Val. biol. de referinta	Test	Rezultat	Val. biol. de referinta
WBC	3.79	4-10 ⁹ /UL			
RSC	3.77	3.50-445	Segm. neutrofile	74	42-75%
HGB	13.5	12-16	Limfocite	16	20-40
MCV	40.3	37-45	Monocite	10	%
MCH	30.8	37-45			
MCHC	30.8	33-38			
RDW-CV	141	150-400			
PLT	142	105-400			
NEUT%	24.8	43-76			
LYMPH%	65.4	15-41			
MONO%	50.8	0-10			
EOS%	8.8	15-41			
BOS%	0.01	0-0.1			
EAS%	85.9	15-41			
RET%	2.13	0.5-2			
ER	0.0821	1000%			
ER	20.1	11.0-15.90			
LATR	79.2	88.69-18.80			
AFER	6.4	0-12			

Analizele au fost validate tehnic:
Dr. Cristina Selean toate

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

Poster Presentations Session

ORIGINAL RESEARCH

33. Opportunities for Climate-Sensitive Work in the Health Sector - Kenya and Germany in Focus

Cyrus Kimanthi,¹ Juliette Clara Schreiber,² Andrea Budnick,²
Pamela Miloya Godia.¹

¹ Faculty of Health Sciences, University of Nairobi, Kenya

² Charité– Universitätsmedizin Berlin, Germany

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=13403s>

Background: Healthcare systems around the world are facing unprecedented challenges as concerns about climate change and its widespread effects intensify. The healthcare sector has two big problems: it is very vulnerable to the health effects of climate change and yet it contributes significantly to greenhouse gas emissions. Therefore, transitioning to climate-sensitive healthcare is a top concern for the whole world. However, implementation differs significantly across various economic and geographical contexts. This study aimed to identify and compare opportunities for climate-sensitive work in the health sectors of Kenya and Germany.

Methods: The study employed a qualitative approach, using a combination of field observations and expert interviews between July and September 2025. Data was collected over four-week periods at Kenyatta National Hospital (KNH) in Nairobi, Kenya, and Charité – Universitätsmedizin in Berlin, Germany. Methods included structured field observations across six key categories (energy, mobility, nutrition, supply chains, waste management, and digitalization) and in-depth, semi-structured expert interviews with medical students and hospital staff. Interview transcripts and observational notes were analyzed using thematic analysis.

Results: KNH demonstrated inherent low-carbon practices like passive cooling, local food sourcing with minimal packaging, and high reuse of materials including food waste. It however, faced systemic barriers including heavy reliance on fossil fuels, budget constraints, and inadequate waste recycling. Charité utilized energy-efficient infrastructure and efficient public transport but struggled with high food waste from individual packaging and perceived inefficiencies in waste sorting. Both institutions were making efforts towards digitalization especially in patient records. A significant knowledge-attitude-practice gap was identified; healthcare professionals and students in both countries expressed strong interest but reported a lack of formal education on climate-health interlinkages.

Conclusion: High-income healthcare systems can learn resource-efficient practices from low-income settings. Health care sectors in low and middle-income countries can adopt technological advancements from the former. Overcoming shared barriers such as educational gaps is crucial. These findings underscore the critical need for tailored interventions, cross-context learning, and

integrating planetary health education into the core of medical training and hospital management.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

34. **Near-Peer Teaching of Laparoscopic Skills Among Medical Students – A Randomized Feasibility Study**

Martin Ho¹, Leonie Heskin^{1,2}, Lena Dablouk¹, Yasmina Richa¹, Joshua Nolan¹, Andrew O'Brien¹, Samin Abrar¹, Derek Hennessey^{1,3}

¹ Department of Surgery, University College Cork, Ireland

² ASSERT Research Centre, Brookfield Health Sciences Complex, University College Cork, Ireland

³ Department of Urology, Mercy University Hospital, Cork, Ireland

▶ <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=10618s>

Background: Laparoscopic surgery is integral to modern surgical practice, with proficiency increasingly required across a range of specialties. However, many medical students graduate with limited exposure to essential skills. To address this, university surgical societies have adopted the "Near-peer" model to teach surgical skills. That is, senior or experienced medical students teach junior students basic surgical skills. However, the objective impact of this intervention remains under-evaluated. Furthermore, objective evaluation requires a comprehensive and validated assessment tool, which is currently lacking. The aims of this study were to develop a novel objective assessment tool, assess changes in students' confidence and objective performance in laparoscopic tasks following near-peer versus self-directed training, and explore factors associated with performance outcomes.

Methods: This single-blinded, randomised feasibility study enrolled 42 medical students without prior laparoscopic experience. Participants were assigned via computer randomisation to peer-taught (Group 1) or self-taught group (Group 2) and completed six weekly sessions across four laparoscopic stations: Ball Transfer, Circle Cutting, Peg Transfer, and String. Each of the peer-teachers had at least six months of peer-teaching experience and had completed an online teaching module. Performance was scored using a novel objective assessment tool developed through a Modified Delphi Method. In contrast to a traditional Delphi approach, a draft assessment tool was developed by the first author based on a literature review and preliminary framework. This was distributed to three experts in laparoscopic surgery and surgical education who provided structured feedback until unanimous consensus was achieved. The assessment domains of the novel assessment tool were unique for each station. Points were allocated for specific task anchors based on the performance quality of each step, alongside bonuses, deductions, and overall impression (Table 1). Two blinded surgical trainees independently assessed all performances. One-way Interclass Correlation was calculated for each station pre-intervention.

Results: No significant differences were observed in pre-intervention objective performance between groups, except for the "Peg Transfer" station. Post-intervention, the novel assessment tool demonstrated that both groups improved significantly across all tasks ($p < 0.001$). Similarly, both groups' confidence improved significantly ($p < 0.001$). The peer-taught group outperformed the self-directed group in "Circle Cutting" ($p = 0.02$) and "String" ($p = 0.01$). This study found no relationship between age, gender, or video game experience and performance outcomes. One-way Interclass Correlation was 0.845 for the pre-intervention "Ball Transfer" station, 0.897 for the "Circle Cutting", 0.951 for the "Peg Transfer", and 0.846 for the "String" station.

Conclusion: This is the first study to demonstrate that near-peer teaching of laparoscopic skills significantly improved laparoscopic performance among medical students compared with a control group. While the feasibility design limited generalisability, the results support the broader integration of near-peer teaching of laparoscopic surgical skills within the undergraduate setting. A multi-centre randomised controlled trial, powered on the effect sizes generated in this feasibility study is the essential next step to confirm efficacy. Furthermore, the validation of our novel assessment tool may offer a new gold standard for evaluating laparoscopic performance in undergraduate surgical education.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

35. Managing Hyperphagia, Obesity, and Hyperglycemia in Prader-Willi Syndrome: A Meta-Analysis of GLP-1 agonists and SGLT2 inhibitors

Saumika Mulluri¹¹ The University of Queensland-Ochsner Clinical School, Brisbane, AU, and Louisiana, USA

▶ <https://www.youtube.com/watch?v=4rJ3DHWeKR8&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd448&index=6&t=15611s>

Background: Prader-Willi Syndrome (PWS) is a genetic disorder caused by a deletion, mutation, or imprinting error of the paternal 15q11-13 region or by maternal uniparental disomy of chromosome 15. One of the disorder's most noticeable characteristics is the development of a constant insatiable appetite, which often results in hyperphagia, hyperglycemia and severe obesity. Hyperphagia related incidents and obesity complications are the leading cause of death for individuals with PWS. Effective treatments for hyperphagia, obesity, and hyperglycemia are needed to improve the quality of life and life expectancy for patients with PWS.

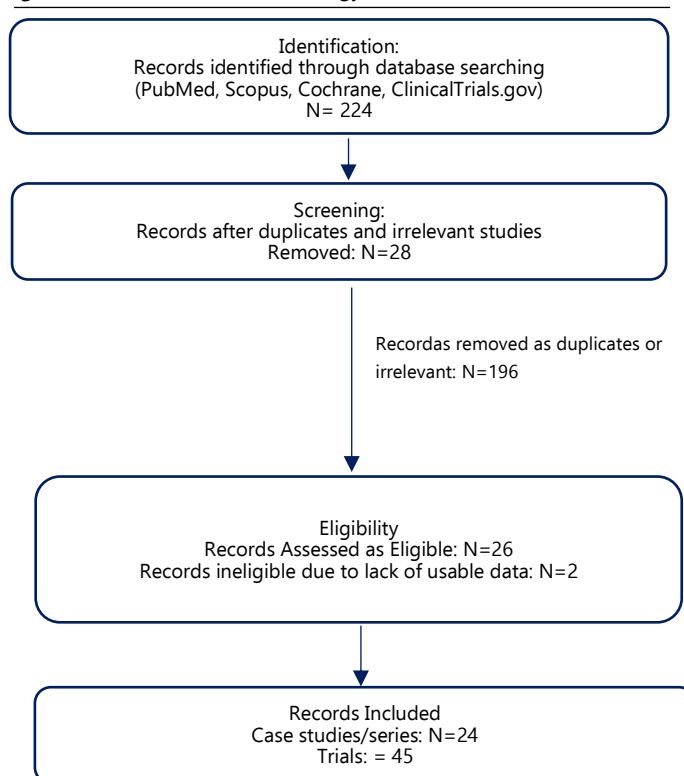
Methods: This meta-analysis aims to assess changes in weight, HbA1c, and hyperphagia after the commencement of GLP-1 agonists and SGLT2 inhibitors in individuals with PWS. A review of the literature was conducted by searching Scopus, PubMed, clinicaltrials.gov, and Cochrane to identify relevant case studies, case series, retrospective studies, non-randomized clinical trials, and randomized clinical trials that involved treating PWS patients with any GLP-1 agonists or SGLT2 inhibitors. A total of 224 records were screened with 45 studies meeting inclusion criteria. Studies involving monotherapy and combination therapy regimens were included, and studies of all ages were included. Case and retrospective studies must have quantitative data on changes in weight, hyperphagia, BMI, or HbA1c to be included in the meta-analysis, and a meta-analysis of raw data extracted from these studies was conducted. For the studies involving trials, a fixed-effect meta-analytic model was used.

Results: Preliminary analysis of the studies showed promising results that indicated that GLP-1 agonists and SGLT2 inhibitors could help PWS patients with weight management, reduction of hyperphagia, and glycemic control. However, most of the studies were retrospective case reviews rather than trials, and the trials had less favorable results. The two clinical trials, which looked at the GLP-1 agonists exenatide and liraglutide, showed limited improvement in HbA1c and hyperphagia, but there were no clinically significant changes in weight in either trial.

Conclusions: Emerging evidence indicates that GLP-1 agonists and SGLT2 inhibitors may provide meaningful benefits for individuals with Prader-Willi Syndrome by reducing hyperphagia, improving glycemic control, and supporting weight management. Nonetheless, the current literature is limited primarily to case reports and small

observational studies, and only two trials have been published. Future clinical trials are needed to assess the efficacy and safety of newer GLP-1 medications such as semaglutide and tirzepatide. In studies of the broader population, these newer drugs have demonstrated greater weight loss than older drugs in their class like liraglutide and exenatide. Additionally, further investigation into combination strategies, particularly pairing GLP-1 agonists or SGLT2 inhibitors with diazoxide choline, are needed. Diazoxide choline was recently approved for treating PWS-associated hyperphagia, but one adverse effect reported for this drug was hyperglycemia. Since GLP-1 agonists and SGLT2 inhibitors are effective glycemic control drugs, investigation into their interactions with diazoxide choline should be undertaken. These additional clinical trials are essential to improve the treatment options and ultimately improve both quality of life and long-term health outcomes in patients with PWS.

Figure 1. Overview of Search Strategy and Process



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt
Open
Library
Publishing

ORIGINAL RESEARCH

36. **What Medical Students Can Learn from the 2024 Dengue Outbreak in Pakistan: Clinical Spectrum, Biochemical Abnormalities and Predictors of Severity**Mahnoor Ahmed¹, Shahan Ahmed², Faizan Ahmed³,
Hamayun Ashraf¹ Rawalpindi Medical University, Rawalpindi, Pakistan² Rawal Institute of Health Sciences, Islamabad, Pakistan³ Punjab Medical College, Faisalabad, Pakistan

▶ <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=6666s>

Background: To provide insights into the demographic profile, clinical manifestations, biochemical abnormalities, and outcomes of patients admitted with dengue fever (DF) during the 2024 outbreak in Pakistan.

Methods: This prospective cohort hospital-based study was carried out at Fauji Foundation Hospital Rawalpindi from August to November 2024. DF was diagnosed on the basis of positive Dengue NS-1 antigen or IgM antibody or both. Patients under 12 years, having other causes of fever or chronic co-morbid diseases were excluded. Demographic data, symptoms, clinical examination signs and laboratory parameters were recorded on a proforma. Severity of dengue was based on WHO revised classification of 2009. Data were analyzed using SPSS, version 21.0.

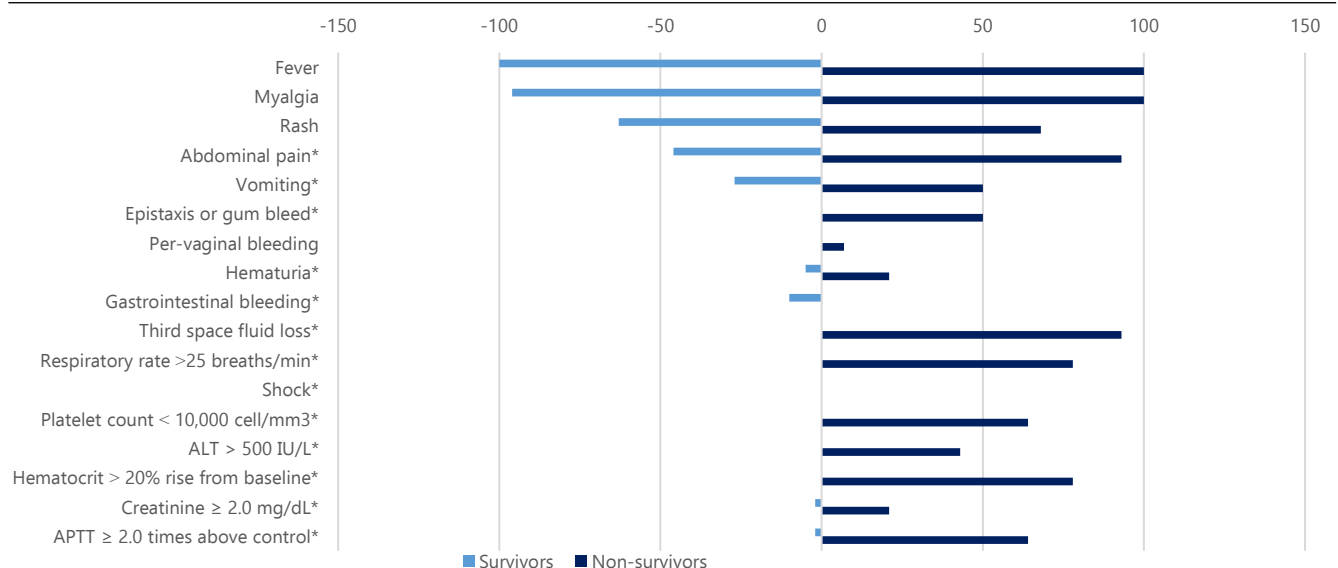
Results: A total of 198 patients were included and majority of them (83.8%) were from the Pothohar Plateau of Punjab comprising of Rawalpindi, Chakwal, Jhelum and Attock districts. Diagnosis was based on positive Dengue NS-1 antigen in 132 (66.6%), positive IgM

antibody in 21 (10.6%) and both NS-1 and IgM positive in 45 (22.7%) patients. Mean age was 39.14 ± 17.6 years and 173 (87.4%) were females. The mean duration of hospital stay was 4.98 ± 2.42 days. Twenty six (13.1%) patients were categorized as "Dengue without warning signs" (DWoWS), 150 (76%) patients as "Dengue with warning signs" (DWWS), and 22 (11%) patients as "Severe Dengue" (SD). Among this study cohort, 184 (92.9%) survived and improved clinically to be discharged, however, there were 14 (7.1%) mortalities. All these 14 patients had Severe Dengue. Compared with survivors the non-survivors; age did not differ significantly; 38.6 ± 17.7 vs 45.8 ± 14.3 years respectively, $p = 0.139$. The proportion of non-survivors was significantly higher among males (24%) as compared to females (4.6%), $p = 0.00$. The OR (odds ratio) of a male dying was 10.8 time that of a female.

All patients of both groups had a history of fever. The proportion of patients with myalgia, rash, vaginal bleed did not differ between the two groups. However, the presentation of abdominal pain, persistent vomiting, epistaxis, hematuria, gastrointestinal bleeding, third space fluid leak in the form of pleural effusion or ascites, tachypnea and shock were significantly more common among the non-survivors; $p < 0.05$. Moreover, very low platelet count below 10,000 cells/mm³, very high ALT above 500 IU/L, AKI as evidenced by serum creatinine above 2.0 mg/dL and coagulopathy as evidenced by prolonged APTT were all significantly more frequent among the non-survivors; $p = 0.00$. Among these 14 fatal cases, 11 had a platelet count less than 10,000, all had evidence of third space fluid loss, 10 were in shock (systolic BP < 90), 10 had major GI bleed, 11 had epistaxis, 10 had AKI, 6 had ALT > 500 IU/L, and 6 had a prolonged APTT.

Conclusion: The 2024 dengue outbreak in Pothohar region of Pakistan was characterized by high rate of severe dengue and mortality. WHO 2009 classification of Dengue Severity should be used to stratify the dengue patients. Signs of severe dengue should alert the clinician to the heightened risk of mortality.

Figure 1. Dengue Fever; Clinical Presentation According to Severity



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH**37. Risk of Recurrence of Congenital Ocular Toxoplasmosis in Children: A Meta-Analysis Review of Studies With Long-Term Clinical Follow-up.**

Juan David Duarte Arias¹, Geraldine Mesa Londoño¹, Nicolás León Parra¹, Jorge Enrique Gómez Marín¹

¹ Faculty of Health Science. University of Quindío. Colombia.

<https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=9511s>

Background. Congenital toxoplasmosis, a vertical infection caused by *Toxoplasma gondii*, can result in neurological and ocular sequelae that may manifest even years postnatally. Although standardized postnatal treatments have been implemented, clinical recurrences, particularly ocular ones, are anticipated to persist during extended follow-up periods. Consequently, prenatal treatment may potentially mitigate these recurrences; however, the evidence supporting this is currently limited and dispersed.

Aim: To conduct a meta-analysis on the recurrence rate in children with congenital toxoplasmosis, considering their history of prenatal and postnatal treatment (spanning at least one year), and incorporating long-term clinical follow-up (extending for a minimum of two years).

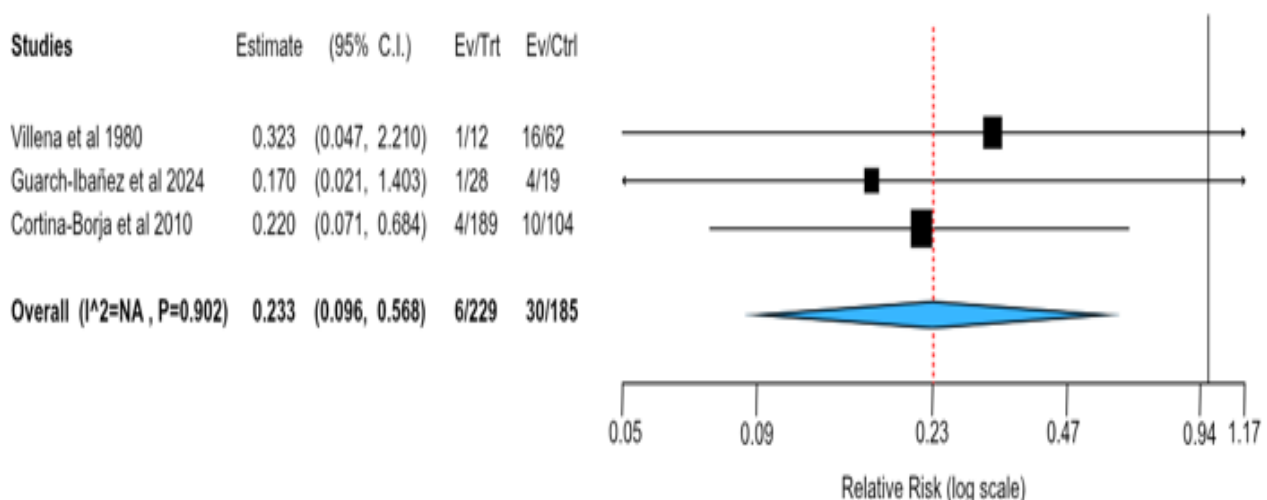
Methods. The databases utilized for the study selection process included PubMed, Web of Science, and Google Scholar. The Medical

Subject Headings (MeSH) terms employed were "Toxoplasmosis AND Congenital" and "Toxoplasmosis AND Ocular." The search was refined using the filters "clinical trial" and "randomized controlled trial." Additionally, the references of the identified articles were scrutinized to identify other pertinent studies, employing the snowball technique. Experts in the field were consulted to provide relevant published or unpublished data. Studies were included if they reported a minimum of two years of follow-up and presented the results of ophthalmological follow-up. Data concerning prenatal treatment were extracted and systematically organized in an Excel database. The recurrence rate was determined by dividing the number of relapses among untreated patients over the follow-up period by 100.

Results. Following revision, only three studies documented the incidence of new retinochoroiditis episodes during extended ophthalmological follow-up. All children in these cohorts received a minimum of one year, with some receiving up to two years of postnatal anti-*Toxoplasma* treatment. The adjusted recurrence rate in prenatally treated children was 2.6 (n = 229), whereas in untreated children, it was 16.2 (n = 185). The overall adjusted risk of recurrence in prenatally treated children was 0.23 (95% CI: 0.09–0.56; p = 0.001).

Conclusions. There is a paucity of research concerning the impact of prenatal treatment on the ocular recurrence of congenital toxoplasmosis. A meta-analysis of three studies revealed that the absence of prenatal treatment heightened the risk of new episodes, even after one year of comprehensive postnatal treatment.

Figure 1. Forest Plot: Meta-Analysis of Relative Risk (Vilena, Guarch-Ibañez, and Cortina-Borja Studies).



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing

**2ND PLACE FOR BEST POSTER PRESENTATION AT
THE WCMSR BASED ON JUDGE SCORES (2 WAY TIE)****ORIGINAL RESEARCH****38. Aging Patients Changing Substances: Unexpected
Demographic Shifts in Türkiye's Drug Treatment
Admissions Over a Decade**Ayça Sila Kumtepe,¹ Levent Özdemir,² Serranur Sığındere,²
Derya Çağlayan.²¹Marmara Süleyman İlik District State Hospital, Balıkesir, Türkiye²Bursa Uludag University, Bursa, Türkiye<https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=6&t=8731s>

Background: Substance use disorders (SUD) have undergone significant demographic and epidemiological shifts worldwide, with emerging substances and evolving patterns of use presenting new challenges for healthcare systems. In Türkiye, the past decade has been marked by increased policy efforts to expand treatment access and reduce drug-related harms. However, systematic evaluations of national-level data remain limited. This study retrospectively examines Türkiye's national drug reports between 2013 and 2023 to identify critical trends in treatment admissions, substance prevalence, and health outcomes among individuals with SUD.

Methods: We conducted a retrospective analysis of official data from the Turkish Ministry of Interior covering the period 2013–2023. A total of 362,560 documented cases were included. Key indicators assessed were annual treatment admissions, direct drug-related mortality, seized illicit substances, and infectious disease markers (including HIV) among people who inject drugs (PWID). Trends were further stratified by demographic variables such as age, sex, and primary substance of use.

Results: Over the study period, treatment admissions for SUD rose by 60%, reflecting both increased prevalence and broader treatment availability. Direct drug-related mortality declined by 39.6% between 2017 and 2023, coinciding with the implementation of harm reduction policies. Notably, methamphetamine emerged as the dominant substance, with an average annual prevalence increase of 46.2%. This trend displaced opioids as the leading primary substance, with opioid-related admissions declining from 76.3% to 4.2%. Mortality patterns revealed that 75.2% of drug-related deaths in 2022 were linked to polydrug use.

Demographic analysis highlighted substantial changes in the treatment population. The proportion of female participants increased from 5.6% to 9.7%, indicating a narrowing gender gap in treatment access. The mean age of treatment entrants rose from 24.3 to 27.6 years, demonstrating a gradual ageing trend. Educational profiles also shifted, with broader representation across different academic backgrounds.

Despite gains in treatment expansion, infectious disease surveillance raised concerns. HIV seropositivity among PWID increased 6.7-fold, predominantly associated with methamphetamine injection, underscoring emerging public health risks tied to changing patterns of substance use.

Conclusion: This analysis reveals profound demographic and epidemiological shifts in Türkiye's substance use landscape over the past decade. Rising treatment admissions, declining opioid prevalence, and the rapid dominance of methamphetamine use highlight evolving drug-related challenges. Positive outcomes include reduced drug-related mortality and increased female engagement in treatment, suggesting partial success of harm reduction policies. However, the surge in methamphetamine-related harms, polydrug mortality, and HIV incidence among PWID signal urgent areas for intervention. These findings underscore the need for adaptive, evidence-based strategies that integrate harm reduction, infectious disease prevention, and targeted support for vulnerable populations.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

1ST PLACE FOR BEST POSTER PRESENTATION AT THE WCMSR BASED ON JUDGE SCORES**ORIGINAL RESEARCH****39. Cross Sectional Study on Air Pollution and its Influence on Health-Related Quality of Life in Coimbatore.**

Dhaarani Dharmaraj¹, Fredrick Stephen², Nawin Jai Vignesh², Naveen Prabhu Jayaraj², Sugunadevi G²

¹Second-year Postgraduate, Department of Community Medicine, Karpagam Faculty of Medical Sciences & Research, Coimbatore, India

² MD, Department of Community Medicine, Karpagam Faculty of Medical Sciences & Research, Coimbatore, India

<https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhgNq3xJClbaf00Y5bvBcgMmXpgzJxd44&index=6&t=7662s>

Background: The air quality inside and outside of buildings and structures is referred to as indoor air quality (IAQ), particularly as it pertains to the comfort and health of building occupants. Since most individuals spend 90% of their time indoors, mostly at home or at work, indoor environment conditions have a significant impact on human wellbeing. Air quality is closely linked to global ecosystems and climate, and the impact of indoor air pollution on people's quality of life is an iceberg.

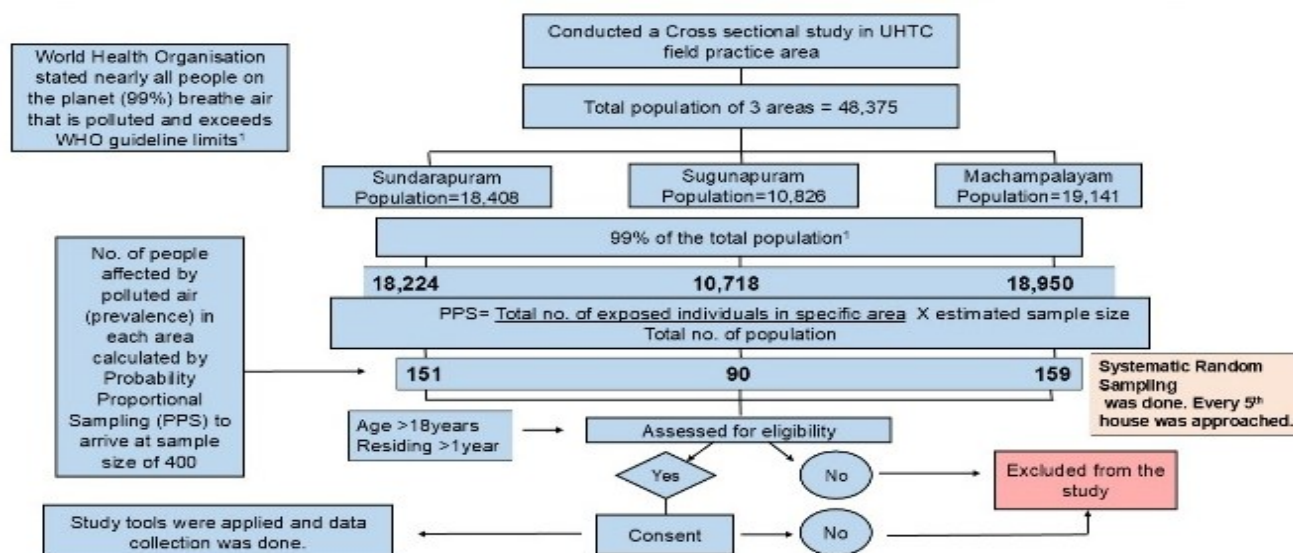
Objectives: The study aim to assess the indoor air pollution and its influence on Health Related Quality of Life (HRQoL) in an urban population.

Methods: A cross sectional study was conducted among 400 adults under an urban field practice area of a private college using systematic random sampling. The semi-structured questionnaire was designed for indoor air pollution along with EuroQol 5-Dimension 5-level (EQ-5D-5L); EuroQol Visual Analogue Scale (EQ VAS) was used. The data collected was entered in Microsoft Excel and analysed using SPSS software v.25. Descriptive statistics such as mean (SD), proportion has been done accordingly with inferential statistics chi-square test was used to see association between categorical variables. Cox proportional hazard model – hazard ratio and Kaplan Meier Curve – visualize life expectancy deterioration (LED) was done accordingly.

Results: The prevalence of indoor air pollution was 72.5% in our study area. Based on EQ 5D 5L, the mean ($\pm$ SD) score is 0.86 ($\pm$ 0.17), and the EQ VAS score is 76.3 ($\pm$ 11.1) of satisfactory life. There was a significant association between the presence of indoor air pollution and poor health based on EQ-5D-5L score (0.041) type of family (0.002), overcrowding (0.009), second-hand smoking ($<$ 0.01), and comorbidities ($<$ 0.01).

Conclusion: The study highlighted that indoor air pollution negatively affects the quality of life in the study population, with a 4.56 years loss in Quality-Adjusted Life Expectancy (QALE). To improve the health and well-being of the population, we recommend to enhance the air quality monitoring with strict regulations, using alternate sources of energy in all possible fields, and early detection of the disease as well as health interventions to mitigate the impact of pollution-related health issues.

Figure 1. Flow Chart Depicting Methodology of the Study.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

40. **MALAT1 and MIAT as Emerging Biomarkers for Diabetic Retinopathy: A Systematic Review and Meta-Analysis**Saransh Gupta,¹ Seerat Kular,¹ Vandana Sharma,¹ Anuradha Raj,¹ Harmanpreet Singh Kapoor,² Aklank Jain.²¹ All India Institute of Medical Sciences, Bathinda, Punjab, India² The Central University of Punjab, Bathindam India

<https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xjCibafO0Y5bvBcgMmXpgzJxd44&index=6&t=8306s>

Background: Diabetic retinopathy (DR) is a leading cause of preventable blindness, affecting nearly one-fourth of diabetic patients worldwide. Early diagnosis remains a major challenge due to reliance on labour-intensive, clinician-dependent fundoscopy. Long non-coding RNAs (lncRNAs), particularly MALAT1 (Metastasis-Associated Lung Adenocarcinoma Transcript 1) and MIAT (Myocardial Infarction-Associated Transcript), have been implicated in the pathogenesis of DR through regulation of angiogenesis, inflammation, oxidative stress, and vascular dysfunction. Their measurable expression in accessible biofluids such as serum and tears make them promising candidates for non-invasive biomarkers. The objective of this systematic review and meta-analysis was to assess the utility of MALAT1 and MIAT as diagnostic biomarkers for diabetic retinopathy.

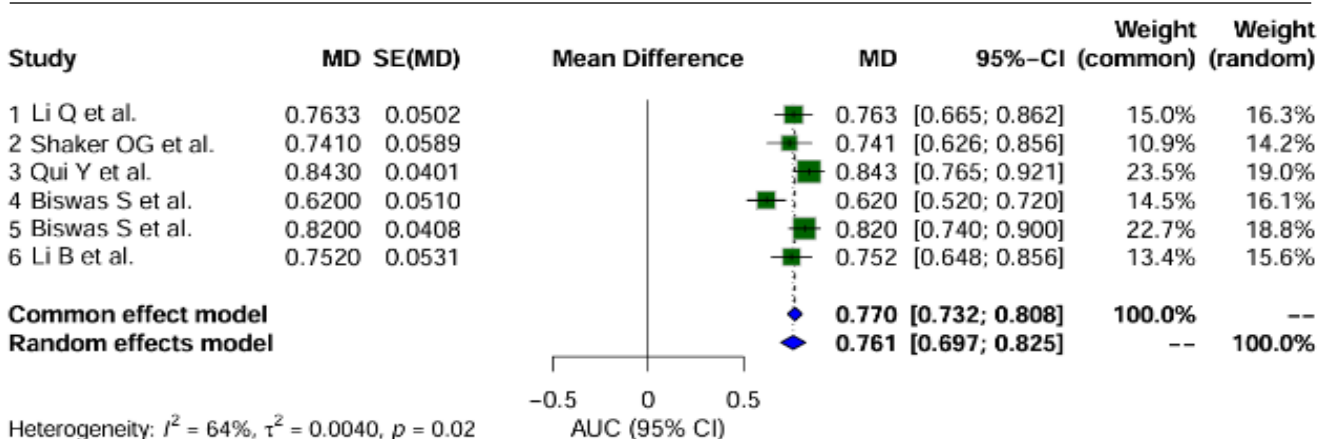
Methods: The study methodology complied with PRISMA 2020 standards and was documented in the PROSPERO registry (CRD420250650000). Databases including PubMed, Embase, Scopus, and PubMed Central were systematically searched, without date restrictions. Eligible studies included original, full-length research

articles, case-control studies, and clinical studies evaluating MALAT1 or MIAT as biomarkers in patients with DR compared to diabetics without DR or healthy controls. Data on sensitivity, specificity, and area under the curve (AUC) were extracted. Quality assessment employed the Newcastle-Ottawa Scale, and pooled diagnostic performance was derived using a random-effects model.

Results: Out of 52 records screened, 5 studies (n = 795 participants) were included, comprising 3 studies on MALAT1, 2 on MIAT, and 1 assessing both. Study populations were drawn from China, Egypt, and Canada, with serum or plasma as the primary biological matrix. MALAT1 demonstrated AUC values ranging from 0.62 to 0.84, with a pooled AUC of 0.737 (95% CI: 0.607–0.868). MIAT showed AUC values between 0.75 and 0.82, with a pooled AUC of 0.786 (95% CI: 0.732–0.839). The overall pooled AUC for both biomarkers was 0.761 (95% CI: 0.697–0.825), indicating moderate-to-good diagnostic performance. (Figure) MIAT showed lower heterogeneity ($I^2 = 0\%$, $p=0.52$) compared to MALAT1 ($I^2 = 83\%$, $p<0.01$), suggesting more consistent diagnostic accuracy across studies. Risk of bias assessment indicated moderate methodological quality, with limitations in exposure ascertainment and control group definition.

Conclusion: The study demonstrates that MALAT1 and MIAT hold promise as non-invasive biomarkers for early detection of diabetic retinopathy. Both lncRNAs were significantly upregulated in DR patients, with diagnostic performance supporting their potential incorporation into molecular diagnostic panels. MIAT showed slightly higher accuracy and consistency compared to MALAT1. However, current evidence is limited by small sample sizes, methodological heterogeneity, and a lack of standardized detection protocols. Larger, multicentre studies with standardized methodologies are required to validate these findings and facilitate translation into clinical practice.

Figure 1. Forest Plot: Meta-Analysis of Mean Difference in AUC (Area Under the Curve).



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

41. **Health Anxiety Among Clinical Medical Students: A Cross-Sectional Study at Uludağ University Faculty of Medicine**Levent Özdemir¹, Ezgi Mühürçü¹, Oğuzhan Çalışkan¹¹ Bursa Uludağ University, Faculty of Medicine, Türkiye

 <https://www.youtube.com/watch?v=4rJ3DHWekRs&list=PLHqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=11662s>

Background: Health anxiety, characterized by persistent worry about having or developing serious illness due to misinterpretation of bodily sensations, represents a significant concern in medical education. Medical Student Syndrome (MSS), a unique manifestation of health anxiety specific to medical trainees, involves the tendency to misinterpret benign bodily sensations as symptoms of diseases being studied. Turkish medical students demonstrate higher rates of anxiety and depression compared to non-medical peers due to academic pressures, emotional exposure to illness, and prolonged training demands. The heightened awareness of disease pathology, combined with educational stressors, may increase susceptibility to health anxiety among medical students. This study aimed to evaluate and compare health anxiety levels among clinical-year medical students across different academic stages.

Methods: A cross-sectional study was conducted among 288 clinical medical students (4th, 5th, and 6th years) at Uludağ University Faculty of Medicine. The sample exceeded the minimum required size of 272 participants calculated using Cochran's finite population correction formula. Data collection utilized a two-part online survey following informed voluntary consent. Part one assessed sociodemographic variables and health anxiety-related factors, while part two employed the validated Turkish version of the Short Health Anxiety Inventory (SHAI), an 18-item self-report instrument evaluating current mental states and emotional responses to illness scenarios. Statistical analysis was performed using SPSS version 23, employing descriptive statistics, Chi-square tests, Student's t-tests, and multiple linear regression analysis to identify significant predictors of health anxiety. Ethics approval was obtained from Uludağ University Faculty of Medicine Clinical Research Ethics Committee.

Results: The study population comprised 136 (47.2%) female and 152 (52.8%) male students, with proportional distribution across academic years: 92 (31.9%) fourth-year, 95 (33.0%) fifth-year, and 101 (35.1%) sixth-year students. The overall mean SHAI score was 19.2 ± 9.3 . Female students exhibited significantly higher health anxiety levels compared to males (21.3 ± 9.0 vs. 16.8 ± 9.0 ; $t=4.20$, $p<0.05$). Among participants, 64.2% reported experiencing distress and anxiety due to self-perceived illness attributed to medical education knowledge, with significantly higher SHAI scores (21.1 ± 8.7 vs. 15.7 ± 9.2 ; $t=4.80$, $p<0.05$). Notably, 54.2% sought medical consultation based on self-diagnosis from medical knowledge, showing significantly elevated anxiety scores (22.6 ± 8.1 vs. 15.2 ± 8.9 ; $t=7.30$, $p<0.05$). Among those

seeking consultation, 53.8% received confirmation of their suspected diagnosis. Multiple linear regression analysis revealed female gender as a significant predictor of health anxiety ($B=4.15$, 95% CI [2.34, 5.96]). No significant differences were observed in health anxiety scores based on residence location or academic year level ($p>0.05$).

Conclusions: This study demonstrates significant health anxiety prevalence among clinical medical students, with female gender and medical education-induced health concerns serving as primary risk factors. The finding that over half of students sought medical consultation based on self-diagnosis highlights the practical impact of health anxiety on healthcare utilization behaviors. The absence of significant differences across academic years suggests that health anxiety remains consistently elevated throughout clinical training phases. These findings emphasize the need for targeted mental health support and educational interventions addressing health anxiety in medical curricula. Early identification and management of health anxiety could improve student wellbeing and reduce inappropriate healthcare-seeking behaviors.

Table 1. Participant Characteristics and Differences in Mean Scores by Sociodemographic and Behavioral Variables.

Variable	n (%)	Mean $\pm$ SD
Gender		
($t = 4.20$, $p<0.05$)		
Female	136 (47.2%)	21.3 ± 9.0
Male	152 (52.8%)	16.8 ± 9.0
Residence Location		
($F = 1.98$, $p>0.05$)		
With Family	89 (30.9%)	20.4 ± 8.7
Shared Apartment	131 (45.5%)	18.0 ± 9.2
Dormitory	68 (23.6%)	19.9 ± 9.9
Worried about having illness learned during medical training?		
($t = 4.80$, $p<0.05$)		
Yes	185 (64.2%)	21.1 ± 8.7
No	103 (35.8%)	15.7 ± 9.2
Visited doctor due to self-diagnosis from medical knowledge?		
($t = 7.30$, $p<0.05$)		
Yes	156 (54.2%)	22.6 ± 8.1
No	132 (45.8%)	15.2 ± 8.9
Was suspected diagnosis confirmed?		
($t = -0.11$, $p>0.05$)		
Yes	84 (53.8%)	22.5 ± 6.9
No	72 (46.2%)	22.6 ± 9.5
Grade Level		
($F = 1.43$, $p>0.05$)		
4th Grade	92 (31.9%)	19.0 ± 10.5
5th Grade	95 (33.0%)	20.4 ± 9.2
6th Grade	101 (35.1%)	18.1 ± 7.8

Legend: Student T Test. One-way ANOVA

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

42. Association Between the Presence of Palmaris Longus Muscle and Handwriting Performance in Medical Students: A Cross-Sectional Study

Anshika Gandhi¹, Dr Priti Chaudhary¹, Seerat Kular¹, Anirudh¹, Saransh Gupta¹, Dr. Apurba Patra¹

¹ All India Institute of Medical Sciences, Bathinda, Punjab

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=5612s>

Background: The Palmaris Longus (PL) is a superficial muscle of the anterior compartment of forearm, contributing to wrist flexion but considered functionally dispensable. Anatomically, it shows significant variability, with agenesis reported in 1.5–63.9% of individuals worldwide. The functional significance of the PL has been studied primarily in sports; however, limited research has examined the role of PL in fine motor tasks, particularly handwriting, which demands both wrist stability and precise motor control. Given the PL's contribution to wrist flexion and hand stabilisation, its absence may influence handwriting. With this background, this study was focused to assess the prevalence of the PL in North Indian medical students, analyze its variation with respect to laterality and gender and determine any possible association between the presence of the PL and handwriting performance. Understanding these relationships could provide insight into the functional relevance of the PL in fine motor activities and contribute to anatomical and clinical knowledge in the population studied.

Methods: A cross-sectional observational study was conducted over two months among 200 first- and second-year MBBS students aged 18–25 years at AIIMS Bathinda. The presence of the PL muscle was assessed using Schaeffer's, Pushpakumar's, and Mishra's tests. Handwriting performance was evaluated with the validated Handwriting Assessment Battery for Adults, which included dot writing, horizontal line drawing, and numeral writing, scored for speed, accuracy, and legibility. Descriptive statistics were computed, and associations were analyzed using regression models (negative-binomial, Poisson, and linear), adjusting for sex, handedness, and PL laterality. A p-value <0.05 was considered statistically significant.

Results: Most participants were right-handed (189/200, 94.5%). PL absence was uncommon (11/200, 5.5%) and more frequent in females (7/73, 9.6%) than males (4/127, 3.1%). Dominant-hand PL was significantly more common in males (122/127, 96.1%) than females (60/73, 82.2%; $p = 0.0016$). Horizontal line scores were lower in males (IRR 0.85, 95% CI 0.76–0.96, $p = 0.008$) and in participants with dominant-hand PL (IRR 0.48, 95% CI 0.24–0.99, $p = 0.046$), but higher in right-handers (IRR 1.82, 95% CI 1.28–2.58, $p = 0.0009$). Dot-writing scores were not significantly associated with handedness or dominant-hand PL (IRR 0.52, 95% CI 0.08–3.22, $p = 0.478$). Numeral-writing scores also showed no statistically significant variation with PL presence.

Conclusion: The findings of our study suggest that the PL muscle has minimal functional impact on fine motor tasks such as handwriting. Future studies with larger and more heterogeneous populations are needed to validate these findings and to investigate potential subtle functional effects.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

43. **Survival Factors in Lung Cancer Patients with Mutations in the PROS1, SERPINC1, F2, and F5 Genes**

Raniya Ahmad¹, Ryan Brownlee¹, Aditya Birla¹, Dongyu Zhang¹, Hung Bui¹, Mashoor Al Ahammed¹, Girindra Raval¹
¹ Medical College of Georgia, USA

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=15122s>

Background: Lung cancer remains a leading cause of cancer mortality globally, with poor 5-year survival rates largely due to late-stage detection. Small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC) are distinguished by distinct growth patterns, metastatic potential, and genetic profiles. Genetic markers in coagulation pathways, including F2, F5, PROS1, and SERPINC1, are implicated in tumor progression, metastasis, and hypercoagulable states. This study investigates the association of these gene mutations with clinical outcomes, tumor location, stage, and demographic factors in lung cancer patients.

Aim: The objective of this study was to characterize the prognostic significance of F2, F5, PROS1, and SERPINC1 mutations in lung cancer by analyzing clinical outcomes and survival patterns. Using TCGA-LUAD and TCGA-LUSC cohorts, we assessed how these mutations interact with patient age, race, tumor laterality, anatomic site, stage, and treatment strategies. The overarching aim was to determine whether thrombophilia mutations represent independent factors influencing survival and to explore their potential role in guiding personalized therapy.

Methods: Primary lung cancer patients with mutations in F2, F5, PROS1, or SERPINC1 were identified from TCGA-LUAD and TCGA-LUSC datasets. STAR RNA gene expression quantification was obtained for each gene. Patients were divided into mutation (n = 569) and comparison (n = 850) groups. Univariate and multivariate Cox proportional hazards analyses were conducted to evaluate associations between overall survival and patient age, race, AJCC pathologic stage, tumor primary site, laterality, and treatment type (chemotherapy, ancillary, immunotherapy, pleurodesis, radiation, targeted therapy). Hazard ratios (HR) with 95% confidence intervals (CI) were calculated.

Results: Across all mutations, higher pathologic stage and right-sided tumor location were consistently associated with worse survival. F5 mutations were significantly associated with improved outcomes in middle lobe (HR = 1.49, 95% CI [1.04–2.13], p = 0.028), pleura (HR = 1.33, 95% CI [1.08–1.64], p = 0.006), and upper lobe tumors (HR = 1.20, 95% CI [1.02–1.41], p = 0.025). PROS1 and SERPINC1 mutations conferred survival benefit in upper lobe tumors. In upper lobe cancers, African American patients harboring F5 mutations exhibited significantly worse survival (age at diagnosis HR = 1.01, 95% CI [1.00–1.02], p = 0.015; race HR = 1.33, 95% CI [1.04–1.71], p = 0.024). Gene

counts were significant in the comparison group but not in mutation groups, potentially reflecting the averaging of gain- and loss-of-function mutations.

Conclusion: Thrombophilia-associated mutations in F2, F5, PROS1, and SERPINC1 influence lung cancer survival outcomes in a site- and demography-specific manner. Higher pathologic stage consistently predicts worse outcomes. F5 mutations confer protective effects in middle lobe, pleura, and upper lobe tumors, while PROS1 and SERPINC1 mutations are protective in upper lobe tumors. Notably, African American patients with F5 mutations experience reduced survival, and right-sided tumors harboring F2, F5, PROS1, or SERPINC1 mutations are associated with worse outcomes. These findings underscore the importance of considering thrombophilia gene status in prognostication and support the development of targeted therapies aimed at optimizing survival in lung cancer patients

Table 1. Univariate Cox Proportional Hazards Analysis of mutation group

Characteristic	Hazards Ratio (HR)	95% CI	p-value
PROS1	0.99	[0.94, 1.05]	0.7
SERPINC1	0.97	[0.88, 1.06]	0.5
F2	1.06	[1.00, 1.13]	0.053
F5	1.05	[1.02, 1.09]	0.003

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

CASE REPORT

44. Leishmaniasis in a Patient with Congenital Neutropenia - A Rare Case Report

Karima Boughambouz¹, Sana Bouimout¹, Yasmine Bouferkas¹, Myriam Boueri²

¹ Medical student, The Faculty of Medicine, University of Algiers I Benyoucef Benkhedda, Algiers, Algeria

² MD, Faculty of Medicine, Lebanese American University, Beirut, Lebanon

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=14150s>

Background: Visceral leishmaniasis is a parasitic disease caused by *Leishmania* species and transmitted by sandflies. It typically presents with fever, hepatosplenomegaly, and cytopenias. Congenital neutropenia is a rare primary immunodeficiency characterized by recurrent infections due to persistently low neutrophil counts. To our knowledge, the coexistence of congenital neutropenia and visceral leishmaniasis has not previously been reported.

The Case: We describe an eight-year-old child with congenital neutropenia who presented with pallor and hepatosplenomegaly, notably in the absence of fever. Laboratory studies showed pancytopenia with severe neutropenia. Given this constellation of findings, several differential diagnoses were initially considered, with leukemia being strongly suspected. Bone marrow aspiration was performed to confirm the diagnosis. Unexpectedly, the marrow examination revealed numerous *Leishmania* amastigotes, establishing the diagnosis of visceral leishmaniasis. The patient was treated with liposomal amphotericin B, resulting in a gradual clinical recovery and normalization of counts.

Conclusion: This report represents the first documented case of concurrent congenital neutropenia and visceral leishmaniasis. It highlights the importance of maintaining a broad differential diagnosis in immunocompromised patients presenting with cytopenias and organomegaly, even in the absence of fever. Early recognition of visceral leishmaniasis remains critical, as timely treatment can substantially improve outcomes.

Figure 1. Clinical photograph showing the patient's abdomen after treatment.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

CASE REPORT**45. Diabetic Striatopathy: A Forgotten Diagnosis in Clinical Neurology**

Sajjad Ahmed Khan,¹ Anish Luitel,¹ Rasmita Poudel,¹ Huma Kausar,² Vivek K. Rauniyar.³

¹ Birat Medical College Teaching Hospital Morang, Nepal

² Karnali Academy of Health Sciences, Nepal

³ Birat Medical College Teaching Hospital, Morang, Nepal

▶ <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLHqNg3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=4713s>

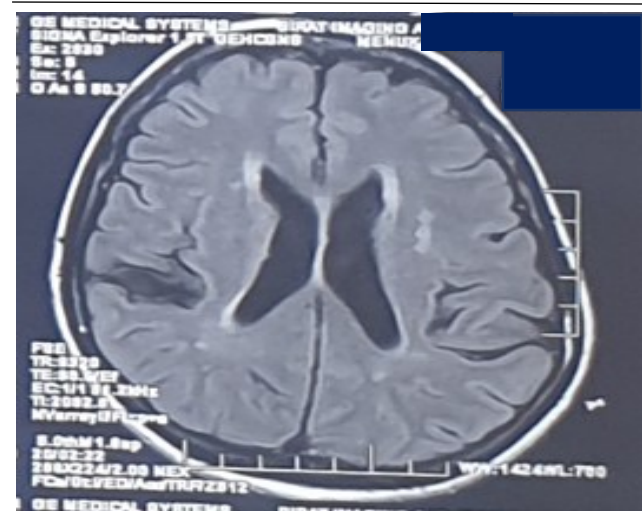
Background: Diabetic striatopathy primarily affects individuals with type 2 DM, often controlled, and is more common in females from Asian regions; cases have been reported across diverse populations.^{1,2} The incidence is approximately 1/100,000.³ Biopsy of the striatum shows vasculopathy with reactive gliosis. Diabetic striatopathy, a rare complication of Diabetes Mellitus (DM), presents a clinical challenge due to its variable manifestations. It is primarily characterized by abnormal involuntary movements, such as chorea or ballismus, which may affect limbs and, as in our case, the oromandibular region.⁴ This atypical presentation highlights the need to include diabetic striatopathy in the differential diagnosis of unexplained movements in patients with diabetes.

The Case A 73-year-old man presented to the emergency department with a 15-day history of involuntary movements involving his left leg and oromandibular region. The symptoms began with mild pain, followed by irregular jaw movements and later choreiform movements of the left leg. He had recently been diagnosed with type 2 diabetes and was on metformin, glyburide, and sitagliptin, with no family history of movement disorders, prior head or neck injuries, or fever. On examination, he was alert, oriented, and hemodynamically stable, with no focal neurological deficits. Laboratory evaluation revealed fasting glucose of 132 mg%, postprandial 148 mg%, HbA1c 7.3%, mild anemia, and elevated thyroid function (0.3 µIU/mL); renal and liver function tests were normal. Initial suspicion of right basal ganglia or subthalamic stroke was revised after MRI revealed right putaminal hyperintensity with preservation of the internal capsule (Figure 1). Endocrinology consultation and anti-chorea therapy with tetrabenazine and clonazepam led to complete resolution, and the patient remained well on follow-up while continuing oral hypoglycemic therapy.

Conclusions: The pathophysiology remains incompletely understood. Evidence suggests a link between hyperglycemia and vascular changes in the striatum, with biopsy showing vasculopathy and reactive gliosis.^{1,5} These hyperglycemia-induced microangiopathic changes parallel those seen in diabetic retinopathy.^{6,7} Further research is required to elucidate the molecular mechanisms connecting striatal vasculopathy to abnormal movements. Diagnosis relies on hyperglycemia history, chorea or ballismus, and characteristic imaging findings, such as striatal

hyperdensity on CT or T1 hyperintensity on MRI, with preservation of the internal capsule distinguishing it from stroke.⁸ Management focuses on glycemic control and symptomatic treatment with anti-chorea agents like tetrabenazine and clonazepam, which resulted in resolution in our patient. Prognosis is generally favorable, with clinical and radiologic improvement after controlling hyperglycemia.⁹ Despite increasing recognition, research gaps persist regarding pathophysiology, clinical variability, and optimal management strategies.¹⁰ Documenting and sharing cases, particularly from resource-limited regions, will enhance understanding and guide clinical care.

Figure 1. Axial Brain MRI (FLAIR Sequence): Periventricular White Matter Lesions.



Legend: MRI imaging findings showing hyperintensities on right putamen with characteristic sparing of the internal capsule.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

CASE REPORT**46. Efficacy of Narrowband UVB Phototherapy in Mild to Moderate Psoriasis: A Case Series from Kharkiv, Ukraine**Marharyta Khaustova¹, Andrii Dashchuk¹¹ Department of Dermatovenereology, Surgical Dermatology and Medical Cosmetology; Kharkiv National Medical University, Ukraine

 <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhgNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=6&t=6067s>

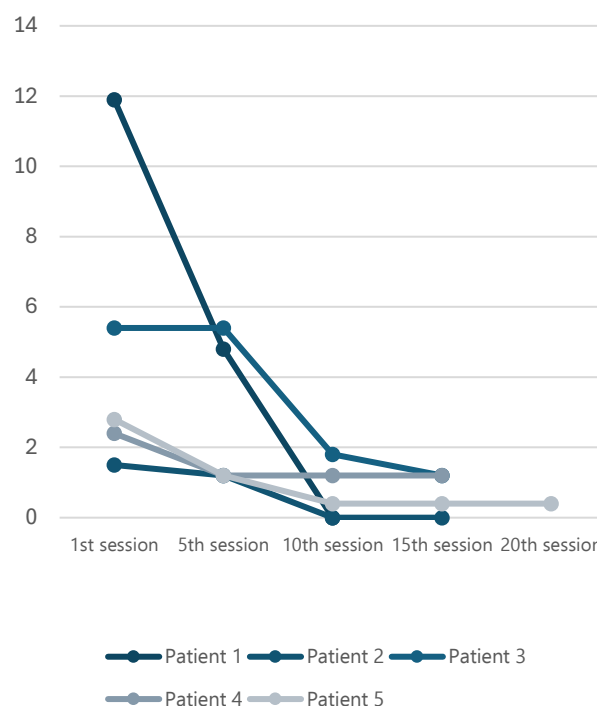
Background. Psoriasis is a genetically determined, chronic autoimmune disease of the skin and joints with a complex immunopathogenesis. Although topical corticosteroids remain the first-line treatment for mild to moderate forms, narrowband UVB (NB-UVB) phototherapy has emerged as an effective non-systemic alternative.

AIM: To evaluate the clinical efficacy of NB-UVB phototherapy in patients with mild to moderate psoriasis using PASI and DLQI scores.

Methods: Five patients were treated with NB-UVB phototherapy at the Dermatologic Centre "Chista shkira" (Kharkiv, Ukraine) between February and May 2025. PASI and DLQI were assessed before and after the course of treatment. All patients received adjunctive topical corticosteroids and antihistamines. Statistical analysis was performed using the Wilcoxon signed-rank test.

Results: The mean PASI score decreased from 4.8 ± 3.78 to 0.56 ± 0.54 ($p = 0.0625$), and DLQI scores also improved, though statistical significance was not achieved ($p = 0.0544$). Clinical improvement, PASI75, was observed in 4 of 5 patients. All patients reported a reduction in pruritus.

Conclusion: NB-UVB phototherapy combined with topical corticosteroids and antihistamines demonstrated clinical improvement in most patients with mild to moderate psoriasis. Although the results did not reach statistical significance due to the small sample size, the findings support further investigation of this therapeutic approach.

Figure 1. PASI Trend.

Legend: The linear diagram represents the progressive decline in PASI scores across treatment sessions; the most notable improvement occurs after the fifth session. PASI - Psoriasis Area and Severity Index.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

CASE REPORT**47. Reconstruction of a Large Lumbar Carcinoma Defect Using a Subtype III Keystone Flap: Case Report**

Wilson Sebastian Peñafiel-Pallares¹, Camila Brito-Balanzategui¹, Juan Velez-Posada¹, Jonathan Velasco²

¹ The Universidad de las Americas, Ecuador

² Pontificia Universidad Catolica del Ecuador

▶ <https://www.youtube.com/watch?v=4rJ3DHWeKR&list=PLhqNq3xJC1bafO0Y5bvBcgMmXpgzJxd44&index=6&t=12678s>

Background: Extensive cutaneous defects of the back following oncologic resection pose significant reconstructive challenges. Traditional techniques such as grafts, rotational or free flaps may involve prolonged operative times, donor-site morbidity, or microvascular complexity. The Keystone perforator island flap, is a fasciocutaneous trapezoidal flap based on vascular perforators that allows tension-free redistribution of local tissue. Its subtype III design, employing paired opposing flaps, is particularly suited for large dorsal defects.

The Case: A 66-year-old female, without significant past medical history, presented with a progressively enlarging exophytic mass in the lumbar region over a two-year period, associated with pain and malodor discharge. Clinical evaluation revealed an irregular, firm lesion with whitish discharge. The mass was completely resected with wide oncologic margins, resulting in a 22 × 16 cm cutaneous defect. Reconstruction was performed using a subtype III Keystone flap, designed with opposing trapezoidal fasciocutaneous flaps advanced in V-Y fashion. No preoperative Doppler was required due to predictable dorsal perforator anatomy. Closure was achieved without tension, and bilateral suction drains were placed. The patient was discharged after three days with no complications. Histopathology reported a poorly differentiated adenocarcinoma with comedo necrosis, lymphovascular invasion, frequent mitoses, and negative margins. At six-month follow-up, complete wound healing was observed, with no recurrence, functional limitation, or esthetic compromise.

Conclusion: The Keystone flap provides a versatile, technically accessible, and reliable method for reconstructing extensive back defects after oncologic resection. In this case, a subtype III design allowed effective closure with excellent functional and cosmetic outcomes, avoiding the need for microsurgical techniques. This case supports the Keystone flap as a valuable option for dorsal reconstruction in settings requiring efficient and safe locoregional solutions.

Figure 1. Surgical Reconstruction Panel: Back Defect Excision and Flap Coverage.



Legend: Intraoperative sequence of a subtype III Keystone flap for reconstruction of a large lumbar defect. (A) Preoperative view showing an exophytic carcinoma lesion in the lumbar region. (B) Surgical planning with trapezoidal flap markings on both sides of the tumor. (C) Wide oncologic resection leaving a 22 × 16 cm defect. (D) Immediate postoperative result after closure with a subtype III Keystone flap, demonstrating tension-free closure and satisfactory coverage.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

Submitted Abstracts Not Accepted for Presentation

ORIGINAL RESEARCH

48. The Lipid Paradox in 5,060 Hospitalized Patients: An Inverse Association Between C-Reactive Protein and Cholesterol in a Tertiary Care Cohort from 2020 to 2024

Kyle E. Thurmann¹, Trisha G. Mukherjee¹, Michael D. White²

¹ Creighton University School of Medicine, Phoenix, USA

² Valleywise Health Medical Center, Phoenix, USA.

Background. Systemic inflammation is theorized to alter lipid metabolism through cytokine-driven suppression of hepatic synthesis, changes in lipoprotein clearance, and impaired reverse cholesterol transport. These theoretical changes include reductions in low-density lipoprotein (LDL), high-density lipoprotein (HDL), and total cholesterol (TC) with elevations in triglycerides (TG). While these mechanisms are biologically plausible and supported in experimental settings, large-scale inpatient data confirming these patterns remain limited. Clarifying how lipid profiles shift during acute inflammation is essential for accurate cardiovascular risk assessment and interpretation of lipid panels during illness.

Methods. We conducted a retrospective analysis of electronic medical record data from a tertiary academic medical center between 2020 and 2024. A total of 5,060 hospitalized adult patients with C-reactive protein (CRP) >5 mg/L and at least one lipid panel were included. Patients were stratified into CRP categories: 5–20, 20–50, 50–100, and >100 mg/L. Mean values for TG, LDL, HDL, and TC were compared across groups using one-way ANOVA. Tukey HSD post-hoc testing was performed to evaluate between-group differences.

Results. Among the 5,060 patients included, the mean age was 50.5 years, and 53.4% were female. As CRP increased, LDL declined from 105.53 mg/dL in the 5–20 mg/L group to 87.94 mg/dL in the >100 mg/L group, and TC declined from 187.04 to 157.28 mg/dL. HDL also showed a consistent inverse relationship with CRP, decreasing from 48.89 to 38.68 mg/dL across categories. ANOVA revealed significant group differences for LDL ($F = 68.53$, $p < 0.0001$), HDL ($F = 94.83$, $p < 0.0001$), TC ($F = 99.39$, $p < 0.0001$), and TG ($F = 5.39$, $p = 0.0011$). Tukey post-hoc tests showed significant LDL reductions between the 5–20 and >100 mg/L groups (mean difference = -17.60 mg/dL, $p < 0.0001$) and the 20–50 and >100 mg/L groups (mean difference = -9.72 mg/dL, $p < 0.0001$). For TC, the 5–20 and >100 mg/L comparison showed a statistically significant reduction (mean difference = -29.77 mg/dL, $p < 0.0001$). For HDL, significant reductions were observed between the 5–20 and >100 mg/L groups (mean difference = -10.21 mg/dL, $p < 0.0001$), 20–50 and >100 (mean difference = -7.58 mg/dL, $p < 0.0001$), and 50–100 and >100 (mean difference = -3.09 mg/dL, $p = 0.0023$).

Conclusion. This study demonstrates a clear inverse association between CRP levels and lipid values, particularly LDL, HDL, and TC, in hospitalized patients. These patterns reflect inflammation-induced

suppression of lipoprotein synthesis and metabolic remodeling. Lipid profiles obtained during inflammatory states may underestimate baseline atherosclerotic cardiovascular risk, highlighting the importance of contextual interpretation to avoid delayed or missed preventive interventions.

Figure 1. Mean Lipid Levels by CRP Category in Hospitalized Patients (N = 5,060)

CRP Category (mg/L)	Triglycerides (mg/dL)	LDL (mg/dL)	HDL (mg/dL)	Total Cholesterol (mg/dL)
5–20	174.31	105.53	48.89	187.04
20–50	163.55	97.66	46.26	174.11
50–100	169.16	89.57	41.78	160.45
>100	186.74	87.94	38.68	157.28
ANOVA F-value	5.39	68.53	94.83	99.39
ANOVA P-value	0.0011	<0.0001	<0.0001	<0.0001

Legend: Mean triglyceride, LDL, HDL, and total cholesterol levels are shown across four CRP categories (5–20, 20–50, 50–100, >100 mg/L). One-way ANOVA revealed significant inverse associations between CRP and LDL ($F = 68.53$, $p < 0.0001$) and total cholesterol ($F = 99.39$, $p < 0.0001$), supporting a lipid-lowering effect of systemic inflammation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

49. Is Mental Health Contagious? Depression, Anxiety, Stress and Burnout Among Mental health professionals in SudanIyas Abdelhadi Ahmed Abdelhadi¹¹ University of Khartoum, Faculty of Medicine, Sudan

Background: Mental health professionals are more likely to experience mental health problems due to their work environment. Poor management of this can lead to job dissatisfaction, low organizational commitment and high turnover. The goal of this cross-sectional study is to evaluate the mental health of health care professionals working in Khartoum state psychiatric hospitals in order to comprehend effective coping strategies.

Methods: Data was collected through both online and paper questionnaires, and analyzed using SPSS version 25, using descriptive statistics for categorical and continuous data, and inferential tests like Mann Whitney U, Kruskal-Wallis, and Sperman's correlation. P value < 0.05 was considered significant.

Results: A total of 164 mental health workers participated, majority of participants were female, single, and worked in private institutions for an average of 36-48 hours per week. The study found that participants experienced high levels of stress and personal burnout, with depression and anxiety being negatively correlated with the age of respondents and work-related burnout.

Conclusion: The study suggests that mental health professionals in Sudan are experiencing relatively high levels of depression, stress, anxiety, and burnout. This highlights the need for effective strategies to support the mental well-being of healthcare professionals in this setting.

Table 1. Demographic and Occupational Profile of the Study Sample.

Variable	Total N	%
Gender		
Male	68	41.5
Female	96	58.5
Social status		
Single	77	47.0
Married	78	47.6
Divorced	7	4.3
Widowed	2	1.2
Profession		
Registrar of Psychiatry	74	45.1
Consultant of Psychiatry	15	9.1
Specialist of Psychiatry	8	4.9
Psychologist	27	16.5
Nurse	6	3.7
Social worker	8	4.9
General Practitioner of Psychiatry	7	4.3
Others	19	11.6
Type of Institution		
Private	105	64.0
Governmental	59	36.0
Nature of work hours?		
< 24 hours per week	33	20.1
24-36 hours per week	48	29.3
36-48 hours per week	54	32.9
> 48 hours per week	29	17.7
	Mean	SD
Age	35.8	10.2
Years of experience	7.3	8.2

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESERCH

50. Healthcare Access Dimensions among ESRD Patients on Dialysis in Northern Sudan during Wartime 2024

Iyas Abdelhadi¹

¹University of Khartoum, Faculty of Medicine, Sudan

Background: Patients with end-stage renal disease (ESRD) undergoing hemodialysis are among the most vulnerable groups in low-income and conflict-affected settings. Adequate access to healthcare is crucial for maintaining treatment continuity, preventing complications, and supporting nutritional health in this population. This study assesses healthcare access and its determinants among end-stage renal disease (ESRD) patients on hemodialysis in Northern Sudan and examines the relationship between access and malnutrition.

Methods: This cross-sectional study involved secondary data analysis from 137 ESRD patients in four dialysis centers in Northern Sudan using cluster sampling. Healthcare access was measured using a structured questionnaire based on the modified Penchansky and Thomas model. Nutritional status was assessed using the Subjective Global Assessment (SGA). Descriptive statistics, bivariate analysis, and logistic regression were used to identify determinants and predictors of healthcare access using the Statistical Package for Social Science (SPSS) v21. Statistical significance was set at p-value < 0.05.

Results: Overall, all patients showed moderate to high levels of healthcare access (mean index: 3.87 ± 0.51). Affordability scored the lowest among access dimensions. Higher income and age were significant predictors of better access (AOR=9.99 and AOR=3.87, respectively; $p < 0.05$), while gender, displacement, and health insurance showed no significant contribution. Malnourished patients showed significantly lower scores on the affordability and awareness domains (p -value < 0.05).

Conclusion: While patients in Northern Sudan had moderate to high access to healthcare, affordability was the most prominent barrier, being more prominent in malnourished patients, besides the low awareness. We recommend socioeconomic support, facilitating healthcare access for vulnerable patients, and nutritional educational programs.

Table 1. Baseline characteristics and healthcare access and use of the ESRD on Haemodialysis in Northern Sudan. N=141

Sociodemographic and clinical characteristics of the Patients		N (%)
Treating Centre	Karima Teaching Hospital	54 (38.3)
	Algolid Dialysis Centre	44 (31.2)
	Argo Dialysis Centre	24 (17.0)
	Wadi Halfa Dialysis Centre	19 (13.5)
Age	< 45	44 (31.2)
	45-65	66 (46.8)
	>= 65	31 (22.0)
	M(Sd)	52 (14.5)
Gender	Male	96 (68.1)
	Female	45 (31.9)
Marital Status	Single	22 (15.6)
	Married	105 (74.5)
	Divorced or widowed	13 (9.2)
	Missing	1 (0.7)
Education	Illiterate	12 (8.5)
	Primary	49 (34.8)
	Secondary	48 (34.0)
	University or higher	31 (22.0)
	Missing	1 (0.7)
Occupation	Retired or non-working	111 (78.7)
	Free worker	19 (13.5)
	Formal Employee	10 (7.1)
	Missing	1 (0.7)
Income/ Month in SDG	Less than 150K	80 (56.7)
	150-300	41 (29.1)
	Above 300K	18 (12.8)
	Missing	2 (1.4)
Displacements	Yes	70 (50.0)
	No	70 (50.0)
	Missing	1 (0.7)
Household	Own house	48 (34.0)
	Rented house	11 (7.8)
	Relative/extended family	78 (55.3)
	IDP camp	3 (2.1)
	Missing	1 (0.7)
Residence	Rural	89 (63.1)
	Urban	47 (33.3)
	Missing	5 (3.5)
	No	12 (8.5)
	Missing	1 (0.7)
Haemodialysis Duration	Less than 2 years	39 (27.7)
	2-5 years	44 (31.2)
	More than 5 years	58 (41.1)
	Mean (SD)	4.6 (4.7)
Health care access	Low Level	0 (0)
	Moderate Level	54 (38.3)
	High Level	83 (58.9)
	Missing	4 (2.8)
	Mean Access Index (SD)	3.9 (0.5)
Health Insurance	SHI	99 (70.2)
	Private	6 (4.3)
	Non	34 (24.1)
	Missing	1 (0.7)
Outpatient Healthcare service contacts (6-months)	Non	73 (51.8)
	1-2	39 (27.7)
	3 or more	15 (10.6)
	Missing	4 (2.8)
Where do you head when you feel sick?	PHC centres	12 (8.5)
	Traditional healer	12 (8.5)
	ER /GP in a 2ndary facility	89 (63.1)
	Specialized care	23 (16.3)
Travel time to facility	Less than 30 mins	73 (51.8)
	30 mins – 1 hr	49 (34.7)
	More than 1 hr	19 (13.5)

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



ORIGINAL RESEARCH

51. **Malnutrition among Patients with End-Stage Renal Disease in War 2024: The Role of Healthcare Access, Dialysis, Gender, and Economic Disparities**Iyas Abdelhadi Ahmed Abdelhadi¹¹ University of Khartoum, Faculty of Medicine, Sudan

Background: Chronic kidney disease (CKD) involves a decline in kidney function for at least three months, often requiring renal replacement therapy at the end stage. End-stage renal disease (ESRD) patients on haemodialysis are at risk of malnutrition, leading to poor clinical outcomes. This complex and multifaceted issue, influenced by socioeconomic and clinical care, is expected to worsen due to the ongoing war and high displacement rates. This study aimed to provide evidence on the prevalence of and factors contributing to malnutrition among haemodialysis patients in northern Sudan.

Methods: This cross-sectional study recruited 141 patients from four public haemodialysis centres in the northern state through cluster sampling. Socioeconomic and clinical data were collected via interviews with patients, caregivers, and healthcare providers. Nutritional status was assessed using Subjective Global Assessment, and healthcare access was evaluated using the Penchansky and Thomas model. Descriptive, bivariate, and multivariate analyses were performed using SPSS v21, with statistical significance set at $P < 0.05$.

Results: Most patients were males (68.1%), and the mean age was 52 ± 14.5 years. Hypertensive renal damage was the most common aetiology of ESRD (36.9%), followed by hereditary kidney diseases (20.6%). Approximately one-fourth of patients were hospitalized in the last 6 months, primarily due to electrolyte disturbances. Mild to moderate malnutrition was observed in 44% of patients, and severe malnutrition in 4.3%. Female gender (OR=2.292, 95% CI= 1.037-5.066) and dialysis duration over 5 years (OR=2.945, 95% CI= 1.155-7.505) predicted malnutrition. Better healthcare access correlated with improved nutritional status ($p < 0.05$). Lower income, urban residence, hypertension, and cardiopathy were linked to higher SGA scores.

Conclusion: The study reveals a high prevalence of malnutrition in haemodialysis patients, with a significant contribution of iatrogenic factors, symptomatic burden, healthcare access, and socio-economic disparities. We recommend regular nutritional monitoring and an integrated healthcare approach addressing clinical factors, symptoms management, and socio-economic support.

Table 1. Bivariate Analysis for the Clinical and Socioeconomic Determinants of Malnutrition Among Patients with ESKD on Hemodialysis at Northern state, Sudan 2024

Knowledge About OTC drugs: -	Count	Column Valid %
All OTC (over the counter) drugs are safe and effective		
Yes	183	46.7%
No	209	53.3%
OTC drugs are used usually for treating diseases like		
I don't know	68	17.3%
Chronic Illnesses	44	11.2%
Minor Illnesses and Injuries	280	71.4%
OTC drugs can cause side effects		
Never	62	15.8%
Mostly	76	19.4%
Sometimes	254	64.8%
All OTC drugs, when taken along with a prescribed drug, are safe		
Yes	176	44.9%
No	216	55.1%
If suspected side-effect(s) are seen, then one should		
Continue taking the drug regardless of the side effect(s)	12	3.1%
Take low dose until side effect(s) subside	29	7.4%
Report to a doctor or pharmacist	226	57.7%
Immediately stop using the drug	125	31.9%

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

52. Cross-Sectional Descriptive Study of Comparative Accuracy of ChatGPT, Google Gemini, And Microsoft Copilot in Solving NEET PG Medical Entrance Test

Manik Bhise¹, Kale Sachin Sadanand¹, Patil Anuradha Vishwanath¹, Jali Nandita Vivekanand¹,¹ MGM Institute of Health Science / MGM Medical College and Hospital, Chhatrapati Sambhajinagar (Aurangabad), Maharashtra, India – 431001

Background: Artificial Intelligence (AI) is increasingly applied in healthcare and medical education, with tools capable of assisting in diagnosis, treatment planning, and exam preparation. The NEET-PG is India's national entrance examination for postgraduate medical training, with case vignettes forming a major component of assessment. AI chatbots therefore hold potential as aids in exam preparation. Previous studies have reported variable accuracy of AI tools in medical licensing exams, but head-to-head comparisons across question types, subjects, and platforms are scarce. Given their rapidly growing use by students and educators, establishing the reliability of these tools is critical. This study directly compares three leading AI chatbots.

The objective was to assess and compare the accuracy of ChatGPT-4, Google Gemini, and Microsoft Copilot in solving the NEET-PG 2023 examination and to evaluate their performance across different question types and medical subjects.

Methods: This cross-sectional descriptive study evaluated the performance of three AI chatbots using a validated set of 200 NEET-PG 2023 questions sourced from PrepLadder and verified against standard textbooks. These questions were presented verbatim to ChatGPT-4, Google Gemini, and Microsoft Copilot. Each chatbot received the questions independently in separate sessions to minimize memory bias. Responses were recorded as correct or incorrect using the validated answer key, and accuracy was expressed as the percentage of correct responses. Comparative analysis was performed for overall accuracy, subject distribution, and question type (recall, analytical, image-based, and case-based). Differences were assessed using the chi-square test with $p < 0.05$ considered statistically significant.

Results: Microsoft Copilot achieved the highest overall accuracy with 165/200 correct responses (82.5%), followed by ChatGPT-4 with 161/200 (80.5%) and Google Gemini with 155/200 (77.5%). The difference in overall performance was not statistically significant ($\chi^2 = 1.6$, $p = 0.4$). All three chatbots achieved 100% accuracy in Microbiology, Anesthesia, and Psychiatry, whereas lower accuracy occurred in Community Medicine, Forensic Medicine, Internal Medicine, and Radiology. No significant variation was found across subjects ($\chi^2 = 2.7$, $p = 0.9$). By question type, recall-based items showed the highest accuracy (85.5%), followed by case-based (82.4%) and analytical (77.3%), while image-based questions were the most challenging (mean accuracy 71.0%). Although Copilot performed slightly better on recall and image-based items, the differences across the three chatbots for question type were not statistically significant ($\chi^2 = 0.35$, $p = 0.9$). These findings highlight variability by subject and question format but no significant difference among the three tools.

Conclusion: All three AI chatbots demonstrated good accuracy in solving NEET-PG questions, performing better in recall-based subjects and less well with image-based items, reflecting current limitations in multimodal applications. They can complement exam

preparation by serving as an accessible and interactive platform, offering an affordable alternative to expensive coaching. In healthcare, AI chatbots hold potential for assisting with diagnosis, treatment planning, triage, and referral, particularly in resource-limited settings. However, concerns regarding data privacy, patient confidentiality, lack of empathy, and erosion of clinical decision-making limit their broader adoption. Future research should evaluate evolving versions of these models, larger exam datasets, and integration into structured educational frameworks.

Table 1. Performance by Subject.

Subject	Total Questions	ChatGPT	Gemini	Copilot
Anatomy	9 (4.5%)	5 (55.6%)	5 (55.6%)	6 (66.7%)
Biochemistry	14 (7%)	14 (100.0%)	13 (92.9%)	13 (92.9%)
Physiology	8 (4%)	6 (75.0%)	6 (75.0%)	6 (75.0%)
Pathology	16 (8%)	13 (81.2%)	14 (87.5%)	15 (93.8%)
Microbiology	10 (5%)	10 (100.0%)	10 (100.0%)	10 (100.0%)
Pharmacology	12 (6%)	9 (75.0%)	10 (83.3%)	11 (91.7%)
Community Medicine	15 (7.5%)	11 (73.3%)	10 (66.7%)	11 (73.3%)
Forensic Medicine and Toxicology	8 (4%)	4 (50.0%)	3 (37.5%)	7 (87.5%)
Ophthalmology	8 (4%)	7 (87.5%)	7 (87.5%)	7 (87.5%)
ENT	6 (3%)	5 (83.3%)	5 (83.3%)	5 (83.3%)
Internal Medicine	17 (8.5%)	12 (70.6%)	12 (70.6%)	12 (70.6%)
Surgery	27 (13.5%)	23 (85.2%)	22 (81.5%)	20 (74.1%)
Pediatrics	10 (5%)	8 (80.0%)	8 (80.0%)	8 (80.0%)
Obstetrics and Gynecology	18 (9%)	15 (83.3%)	13 (72.2%)	14 (77.8%)
Radiology	4 (2%)	2 (50.0%)	2 (50.0%)	2 (50.0%)
Orthopedics	6 (3%)	5 (83.3%)	4 (66.7%)	6 (100.0%)
Anesthesia	3 (1.5%)	3 (100.0%)	3 (100.0%)	3 (100.0%)
Dermatology	4 (2%)	4 (100.0%)	3 (75.0%)	4 (100.0%)
Psychiatry	5 (2.5%)	5 (100.0%)	5 (100.0%)	5 (100.0%)
Total	200 (100%)	161 (80.5%)	155 (77.5%)	165 (82.5%)

Legend: Significance, Chi Square 2.7, $p=0.9$

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

53. Enhancing WASH Practices and Health Outcomes in a Remote Community in the Peruvian Amazon: a Community-Based Intervention

Rosemary Wright¹, Sakhi Shah¹, Venus Liu¹,

¹ Florida International University, USA

Background: Florida International University Herbert Wertheim College of Medicine (FIU HWCOC) students initiated a community health and Water, Sanitation, and Hygiene (WASH) initiative in San Juan de Yanayaku, a remote Peruvian Amazon village of 105 individuals, from November 28 to December 2, 2024. The purpose of this project was to provide essential healthcare services and address critical WASH issues. The project was conducted in collaboration with Nevada Building Hope Foundation, which has provided support to the community for over a decade.

Methods The team established and operated a temporary health clinic in a central community space to evaluate the overall health status of community members. Screenings included common acute and chronic health conditions, nutritional assessments, and vital sign monitoring. Each participant underwent a basic health assessment, with brief interviews to collect self-reported hygiene practices, water consumption, and prior illness history. Data were used to identify hygiene-related illness trends and inform future WASH interventions. New clothing was also distributed to community members. In addition, WASH education at the local primary school emphasized proper handwashing techniques and hygiene practices to reduce communicable disease spread.

Results: The clinic provided health screenings for 40 individuals. Of these, sixty percent were female and most were between 20 and 60 years old. Eighty percent reported direct exposure to Amazon River water. While 65% reported no known medical conditions and 92.5% were not on medications, this may reflect limited healthcare access rather than absence of disease. Diarrhea was more common in river water consumers (50% vs. 12.5%). Stomachaches were also more frequent in river water users (37.5% vs. 25%). Higher glucose levels were observed in individuals drinking river water, suggesting a possible nutritional or metabolic impact linked to chronic infection or lack of food and care. Headaches and muscle aches were found in both groups, with no notable differences. The school-based intervention provided interactive handwashing demonstrations to instill hygiene practices.

Conclusion: This project highlights the urgent need for targeted WASH interventions in San Juan de Yanayaku. The association between river water consumption and diarrheal disease indicates inadequate water sanitation as a major health risk. Elevated blood glucose levels and underdiagnosis of chronic illnesses further suggest limited healthcare access and health literacy. Community-based health screenings provided diagnostic and educational benefits, but a single intervention is insufficient. Ongoing follow-up, educational campaigns, and installation of a permanent water sanitation system are essential to improve long-term outcomes. This initiative

demonstrates that community-driven health assessments can guide sustainable WASH programs and integrate medical outreach with public health advocacy in underserved regions.

Figure 1. Different aspects of the community-based intervention in San Juan de Yanayaku, Peru.



Legend: Different aspects of the community-based intervention in San Juan de Yanayaku, Peru. (A) Medical student discussing the WASH intervention and installation of the water system in the community; (B) medical students educating primary school students on proper handwashing techniques; (C) medical students distributing new clothing to community members; (D) medical student measuring a community member's blood pressure..

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

54. Human Immunodeficiency Virus Infection Among Women with Cervical Cancer: A Cross-Sectional Study

Sai Sadhvikha Kommuru ¹,¹ NTR University of Health Sciences

Background: Cervical Cancer remains a major public health concern worldwide, particularly in low- and middle-income countries. Women living with Human Immunodeficiency Virus (HIV) are at significantly higher risk for persistent Human Papilloma Virus (HPV) infection and progression to invasive cervical cancer due to immune suppression. This study aimed to determine the prevalence of HIV infection among women with cervical cancer and to assess demographic and clinical factors associated with HIV positivity.

Methods: A prospective cross-sectional study was conducted among histologically confirmed cervical cancer patients after the approval of ethics committee. Demographic details, clinical history, HIV status, and treatment history were collected using a pre-validated structured questionnaire after obtaining informed consent. Data were analyzed using descriptive statistics, and subgroup analysis was performed for age, menopausal status, and place of residence.

Results: Eighty patients were included, with a mean age of 47.86 ± 20.94 years; most were aged 45–64 years (51.25%) and presented with stage IIb disease (67.5%). Sixteen patients (20%) were HIV-positive. HIV prevalence was highest among women aged 45–64 years (41.17%) and among urban residents (62.5%). A majority of patients (65%) were premenopausal.

Conclusion: A substantial proportion of cervical cancer patients were HIV-positive, underscoring the need for routine HIV screening, early diagnosis, and integrated management of HIV and cervical cancer to improve clinical outcomes.

Table 1. HIV Status Distribution Among Cervical Cancer Patients

HIV Status	No.of cervical cancer patients	Percentage
Positive	16	20%
Negative	64	80%

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

55. Exploring the Relationship Between Students' Academic Performance and Jungian Psychological Types: A Correlational Study

Lizi Sarjveladze¹,¹ Tbilisi State Medical University, Faculty of medicine,

Tbilisi, Georgia

Introduction: The aim of this study is to explore the potential relationship between students' academic performance and their psychological types, as defined by Carl Jung's theory. The study also aims to highlight the relevance of Jung's theory of psychological types in understanding individual differences in academic performance. The key question is whether a person's psychological type influences their learning process, goal setting, and achievement.

Methods: For theoretical information C. G. JUNG "THE COLLECTED WORKS" Edited by Sir Herbert Read was used. 50 students participated in the correlation study based on informed consent. The inclusion criteria are people with active student status aged 18 to 24 years. Questionnaires were used to collect data. The Myers-Briggs Type Indicator (MBTI) was used to determine the psychological types. SPSS Statistics Program was used to process the data. Four major variables were identified: 1. Gender, 2. University (Tbilisi State Medical University or other), 3. Psychological types, 4. Academic performance for the last 2 semesters (A, B, C, D). A correlation analysis was performed between these variables to determine the Pearson Correlation coefficient.

Results: As a result of the pilot study the correlation between academic performance with student's psychological type was not confirmed (Pearson Correlation $-.132$. Table1.). Given the small cohort, the results cannot be generalized of the general population.

Conclusion: Aforementioned pilot correlation research shows that a person's professional success, academic performance and the scale of the use of knowledge is not dependent on the psychological type. This calls for further studies with bigger and more diverse cohorts.

Table 1. Pearson correlation coefficient

	Academic performance	psychological type
Academic performance	1	$-.132$
psychological type	$-.132$	1

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ORIGINAL RESEARCH

56. **Prevalence of Anxiety Among Medical Students in River Nile Universities: A Cross-Sectional Study**Tarteel Abazer Musa,¹ Alwathig Yahia²¹ Elsheikh Abdulla Elbadri University, Sudan² Facultad de Medicina, Universidad de Al Sheikh Abdullah Al-Badri, Berber, Sudán

Background: Despite the social prestige the medical profession gives, it is not without taxation. Because of the rigorous training curriculum and long-term clinical practice medical school is stressful and onerous for mental health. We aim to measure prevalence of anxiety among medical students in the River Nile state and its association with sociodemographic characteristics.

Methods: A descriptive cross-sectional facility-based study involving 335 students from first to fifth academic years at River Nile State medical schools. conducted using the Hospital Anxiety and Depression Scale (HADS) in addition to questions about a demographic. Data analysis was done on STATA program.

Results: In our study we found a high prevalence of anxiety 71.4% (Anxiety 47.8% and borderline anxiety 23.6%). There was no significant association between different colleges and anxiety ($p=0.85$), and no significant association in different academic years ($p=0.23$), Nationality ($p=0.64$), smoking ($p=0.59$) and drug ($p=0.3$). There was a significant association between anxiety and gender ($p=0.001$) female has more anxious than male.

Conclusions: The Level of anxiety among medical students at River Nile state was high (71.4%), there is an urgent need to focus on awareness about mental well-being and provide the necessary support services to reduce anxiety.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

57. The Impact of Lifestyle on Cardiovascular Health Among Medical Students at 6 October University

Naif A. Jaafari¹,¹ Medical student at 6 October University, Egypt

Background: Life-threatening cardiovascular conditions (CVDs) are one of the most important factors that affect peoples' appetites and life expectancy on a global scale. Lifestyle factors such as diet, physical activity, sleep, and stress levels are important determinants of cardiovascular health. This research examines medical students' lifestyle habits in relation to cardiovascular health indicators at 6 October University.

Methods: This is a cross-sectional study of 100 medical students, and it was conducted via an online questionnaire in English and Arabic. The questionnaire contained demographic data, information about leisure activity, diet, smoking, sleep patterns, stress levels, and self-measured heart rate and blood pressure.

Results: Of the participants, 62% were physically active more than 3 times weekly, only 28% of students reported eating fast food more than twice a week and 35% reported eating fruits and vegetables daily. 64% said they sleep for 6-8 hours a day. 42% reported feeling stressed. Among the responding students, 16% reported having elevated blood pressure and the majority of these students who reported poor lifestyle scores.

Conclusion: These findings suggest that lifestyle behaviours including physical activity and dietary habits are associated with cardiovascular health indicators among medical students. It is necessary to promote healthy lifestyle changes to improve the wellbeing of future health professionals.

Table 1. Summary of Health Behaviors Among Students

Variable	% of Students
Physically active ≥ 3 times/week	62%
Fast food consumption > 2 /week	28%
Daily fruit/vegetable intake	35%
Sleep duration 6–8 hours/night	64%
Reported moderate/high stress	42%
Elevated blood pressure reported	16%

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

58. Emotional Well-Being, Anxiety, Depression, and Burnout Among First-Year Hospital Medical Students in Guatemala: A Pilot Study

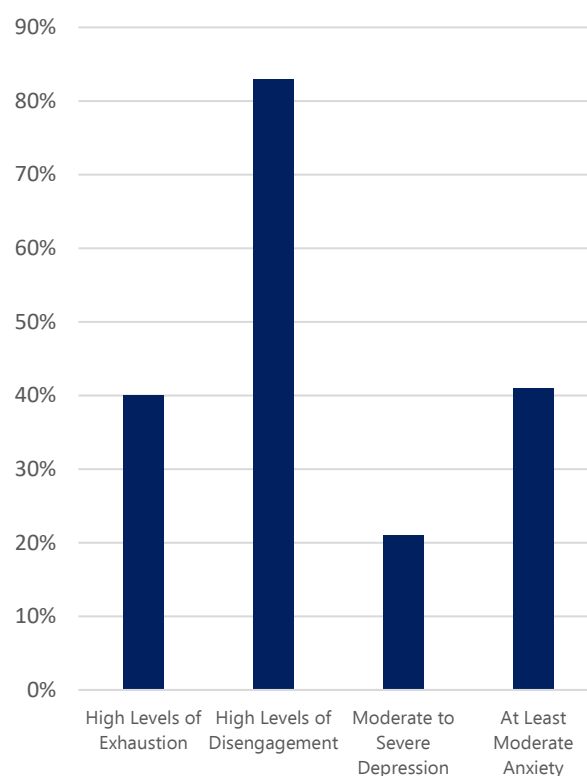
Ana Palomo,¹ Víctor Rivero,¹ Luis Torres.¹¹Universidad de San Carlos de Guatemala, Guatemala City

Background: The transition into the first hospital year is a critical period in medical education, exposing students to new responsibilities, academic demands, and emotional stressors that increase vulnerability to anxiety, depression, and burnout. In Guatemala, evidence on students' mental health at this stage is scarce. This pilot study examined emotional well-being, anxiety, depression, and burnout among Guatemalan medical students.

Methods: A cross-sectional survey was conducted among 50 first-year hospital medical students from public and private universities in Guatemala using non-probabilistic convenience sampling. Data collection employed a Google Forms questionnaire with validated instruments: Patient Health Questionnaire (PHQ-9) for depression, Generalized Anxiety Disorder scale (GAD-7) for anxiety, and Oldenburg Burnout Inventory (OLBI) for exhaustion and disengagement. Sociodemographic data were also obtained. Descriptive statistics, Pearson correlations, and chi-square tests were performed with significance set at $p < 0.05$.

Results: Mean OLBI scores were 16.3 ± 4.2 for exhaustion and 19.5 ± 2.9 for disengagement, with high levels in 40% and 84% of students, respectively. The mean PHQ-9 score was 6.0 ± 3.9 , with 22% meeting criteria for moderate-to-severe depression. The mean GAD-7 score was 9.4 ± 5.5 , with 42% screening positive for moderate or higher anxiety. Depression and anxiety were strongly correlated ($r = 0.71$, $p < 0.001$). Burnout was not significantly associated with depression or anxiety ($p > 0.5$).

Conclusions: This pilot study revealed high rates of anxiety, depression, and burnout among Guatemalan medical students, underscoring the urgent need for institutional interventions to protect mental health.

Figure 1. Prevalence of Mental Health Symptoms Among Participants

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

59. Assessment Of Vision Impairments Among Licensed Drivers In Mathura: A Pilot Study

Dr Ragni Kumari,¹ Jagdish Singh.²

¹ Medical School, India

² Assistant Professor, Department of Optometry, UPUMS, Saifai, Etawah, India

Background: Driving is a visually intensive task that requires the integration of multiple visual functions to ensure road safety. In India, vision screening protocols for obtaining a driving license are often inadequate or inconsistently enforced. This pilot study was conducted to assess the prevalence and types of vision impairments among licensed drivers in Mathura district.

Objective: To evaluate key visual parameters—glare recovery, night vision, color vision, visual acuity, phoria, and horizontal visual field—among licensed male drivers and determine their potential impact on driving performance.

Methods: A cross-sectional pilot study was conducted at Spexwear Optical & Physiotherapy Centre, Mandi chauraha, Sonkh Road, Mathura. A total of 198 male drivers aged 18–56 years participated. Standardized tests were conducted to assess visual acuity (Snellen chart), color vision (Ishihara plates), glare recovery, night vision, phoria, and horizontal field of vision. Data were analyzed using descriptive statistics and chi-square tests; p-values < 0.05 were considered statistically significant.

Results: Visual acuity deficits were noted in 29% of participants (binocular), 33% (right eye), and 25% (left eye). Impairments in glare recovery and night vision were present in 15% and 12% of drivers, respectively. Color vision deficiency was found in 23% of participants, with an additional 13% requiring retesting. Phoria was abnormal in 24%, and 19–20% of drivers showed subnormal horizontal field vision in at least one eye. Most impairments showed statistically significant associations ($p < 0.05$) with driving fitness.

Conclusion: A significant proportion of licensed drivers in Mathura have unrecognized visual impairments. Comprehensive vision screening should be made mandatory in the driver licensing process to enhance road safety and reduce accident risks.

Figure 1: Night Vision Test

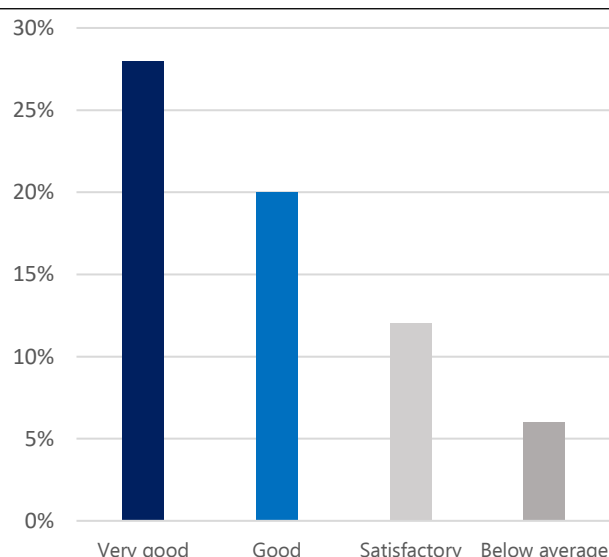


Table 1. Distribution of Visual Function Test Results Among Drivers

Glare Recovery Test						
Grade	Number of Drivers		Percentage (%)		P value	
Outstanding (10)	8		4%		= 0.042	
Excellent (9)	9		5%			
Very Good (8)	41		20%			
Good (7)	40		20%			
Reasonably Good (6)	30		15%			
Satisfactory (5)	29		15%			
Above Average (4)	9		5%			
Average (3)	8		4%			
Below Average (2)	14		7%			
Poor (1)	10		5%			
Night Vision Test						
Grade	Number of Drivers		Percentage (%)		P value	
Outstanding (10)	9		5%		= 0.031	
Excellent (9)	16		8%			
Very Good (8)	55		28%			
Good (7)	39		20%			
Reasonably Good (6)	19		10%			
Satisfactory (5)	23		12%			
Above Average (4)	10		5%			
Average (3)	8		4%			
Below Average (2)	11		6%			
Poor (1)	5		2%			
Color Vision Test						
Grade	Number of Drivers		Percentage (%)		P value	
Normal	125		64%		= 0.019	
Unsuccessful	46		23%			
Retest Needed	27		13%			
Visual Acuity Test						
Grade	Right Eye (n)	Left Eye (n)	Both Eyes (n)	Right Eye (%)	Left Eye (%)	P value
Normal	110	128	120	56%	65%	=0.027
Unsuccessful	66	50	59	33%	25%	
Retest Needed	22	20	19	11%	10%	
Phoria Test						
Grade	Number of Drivers		Percentage (%)		P value	
Normal	136		69%		=0.022	
Unsuccessful	47		24%			
Retest Needed	15		7%			
Horizontal Visual Field Test						
Eye Side	Normal (n, %)		Unsuccessful (n, %)	Retest Needed (n, %)	P value	
Left	154 (78%)		38 (19%)	6 (3%)	= 0.018	
Right	152 (77%)		40 (20%)	6 (3%)		

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

60. **Factors Influencing Varicose Vein Amongst the Local Population of Namakkal - A Cross-Sectional Study**Vivek krishnaa¹¹Third year MBBS, Swamy Vivekanandha Medical College Hospital and Research Institute, Elayampalayam, Tiruchengode, Namakkal – 637205, Tamil Nadu, India.

Background: Varicose veins are a part of the spectrum of chronic venous disease. Varicosity might be due to obstruction, valvular insufficiency and calf muscle pump malfunction. They are not only a cosmetic concern but can also lead to significant morbidity, including pain, edema, skin changes, and ulceration if left untreated. Globally, the prevalence of varicose veins varies between 10% and 30%, influenced by genetic, occupational, and lifestyle factors. Prolonged standing, elevated body mass index (BMI), and hereditary predisposition are among the most widely reported risk factors.

Aim: To assess the estimation of factor that influence the occurrence of varicose veins.

Methods:: This study will be conducted in the Department of General Surgery at Swamy Vivekanandha Medical College Hospital and Research Institute. Patients who are coming to the Out Patient Department(OPD) and are willing to be examined for research purposes will be a part of the study. A minimum of 50 cases will be included in this study. Patients with severe pain and complications like: DVT/associated atherosclerotic arterial diseases will be excluded from the study. Patients with varicose will be examined and interviewed physically. The parameters of the study Age, Gender, Hours of Standing (Occupation) BMI, Pregnancy, Hereditary} will be noted down and the findings will be analyzed statistically using Chi-Squared test, SPSS software to understand the prevalence of varicose vein depending on the factors influencing them.

Conclusions: The study is conducted to analyze the risk factors associated with varicose vein among the local population of Namakkal. Further counselling will be given to reduce the prevalence of varicose vein among the general public

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

ORIGINAL RESEARCH

61. **Knowledge, Attitude, and Practice on Over-the-Counter Drugs Among Medical Students University of Khartoum, 2022-2023**Iyas Abdelhadi Ahmed Abdelhadi¹¹ University of Khartoum, Faculty of Medicine, Sudan

Background: Self-medication with over-the-counter (OTC) medications is common among medical students. It is influenced by many factors, such as age, sex, income, self-care orientation, and medical knowledge. A high level of education and professional status are predictive factors for self-medication.

Unfortunately, especially in developing countries, professional health care is relatively expensive and in some cases not readily available making self-medication an obvious choice of healthcare service. Furthermore, it has been noted that purchase of drugs that can only be purchased with a doctor's prescription in developed countries are OTC in developing countries. Students are expected to have proper knowledge, attitude, and practice (KAP) towards OTC medications and subsequent adverse drug reactions (ADRs).

Objective: This study aimed to assess the KAP of OTC medication use and related factors among medical students, UofK 2022.

Methods: A cross-sectional study was conducted. Data were collected using a self-administered questionnaire from 377 students from year 1 to year 6 University of Khartoum, Faculty of Medicine. Then the data was analyzed using Statistical Package for Social Sciences (SPSS) version 24. Chi-square analysis was conducted and multivariable logistic regression analysis was used to determine the association between KAP and OTC use and its related adverse effects.

Result: A total of 393 students participated in the study. The majority of the respondents (75.2%) reported that they practice self-medication. Fever & headache (76%), cough & common cold (48.5%), and abdominal cramps (45.7%) were the most common conditions for which the students go for self-medication while analgesics (85.2%) followed by antispasmodics (72.4%) were the most commonly used classes of drugs. Minor illnesses (55.9%) and a desire for quick relief 171 (25%) were the main reasons for the self-medication practice with OTC medications.

Conclusion: Self-medication is widely practiced among medical students. Significant problems and malpractices were identified, such as sharing of OTC medications, the use of expired medicines, storage of OTC medications, and not reading expiry dates.

Table 1: Knowledge of the Study Participants Towards OTC Medication Use; N=393

Knowledge About OTC drugs: -		Count	Column Valid %
All OTC (over the counter) drugs are safe and effective	Yes	183	46.7%
	No	209	53.3%
OTC drugs are used usually for treating diseases like	I don't know	68	17.3%
	Chronic Illnesses	44	11.2%
	Minor Illnesses and Injuries	280	71.4%
OTC drugs can cause side effects	Never	62	15.8%
	Mostly	76	19.4%
	Sometimes	254	64.8%
All OTC drugs, when taken along with a prescribed drug, are safe	Yes	176	44.9%
	No	216	55.1%
If suspected side-effect(s) are seen, then one should	Continue taking the drug regardless of the side effect(s)	12	3.1%
	Take low dose until side effect(s) subside	29	7.4%
	Report to a doctor or pharmacist	226	57.7%
	Immediately stop using the drug	125	31.9%

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt | Open Library Publishing

ORIGINAL RESEARCH

62. **Students' Perspectives on the Educational Environment at the University of Khartoum, Faculty of Medicine (2023-2024)**

Malaz M. Abdmotalib¹, Nihal Elmubarak A. Hussein¹, Hadiea Mosaab Ahmedelbashir Hassan¹, Eyad Kashif¹, Muaiaad Adil A. Abdelmotalab¹

¹ Faculty of medicine, University of Khartoum, Sudan

Background: Educational Environment (EE) is a broad category of settings that engage students in learning activities and its plays a central role in shaping students' learning, attitudes, and academic success. A positive EE promotes intellectual growth, cooperation, satisfaction, and achievement, while students' perceptions guide improvement effort. In Sudan, however, medical education faces unique challenges, including limited resources, political instability and ongoing conflict, all of which negatively affect training, infrastructure, and student well-being, highlighting the urgent need for systematic evaluation. At the University of Khartoum's Faculty of Medicine, understanding students' views is vital for identifying strengths and areas requiring improvement. Despite the institution's leading role, little research has examined how academic performance, motivation, and living conditions influence these perceptions.

Methods: A cross-sectional study was conducted using a self-administered, online questionnaire. The Dundee Ready Educational Environment Measure (DREEM) was applied to assess the perceptions of 377 medical students across six academic batches. Stratified random sampling ensured adequate representation by gender and batch. Data were analyzed using SPSS version 22 to examine the influence of demographic and academic factors on five key domains of the educational environment: perceptions of teaching, perceptions of teachers, academic self-perception, perceptions of atmosphere, and social self-perception.

Results: The overall DREEM score was 113.1 ± 19.62 , indicating a generally positive perception of the educational environment. However, subgroup analyses revealed notable disparities. Male students reported lower perceptions of teaching quality ($p = 0.036$), while dormitory residents had a significantly lower perception of teachers ($p = 0.011$). Students with intrinsic motivation exhibited higher scores in teaching ($p = 0.002$) and social self-perception ($p = 0.002$), whereas students experiencing academic difficulties had significantly lower scores in teaching ($p = 0.016$) and atmosphere ($p = 0.029$).

Conclusion: The findings indicate a generally favorable perception of the educational environment, yet subgroup differences highlight areas requiring targeted improvement. Male students' lower ratings of teaching suggest the importance of incorporating gender-sensitive instructional strategies. Similarly, dormitory residents' less favorable views of faculty may point to environmental or institutional barriers limiting student-faculty interaction. The higher scores among intrinsically motivated students underscore the value of fostering self-

directed learning, while lower scores among academically struggling students emphasize the strong link between performance and perceptions of the learning environment. Together, these results call for evidence-based curricular reforms, strengthened student support services, and faculty development initiatives to create a more inclusive and effective environment that supports both academic achievement and professional growth. Student perceptions thus provide critical insights, with targeted interventions in teaching approaches, motivational support, and institutional systems offering pathways to enhance learning outcomes and student well-being.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

63. **Myeloid-Derived Suppressor Cells in HIV: A Marker Beyond CD4 Count?**Jelena Mičić¹, Nikola Trifunović¹, Ivan Stanojević¹, Vesna Begović Kuprešanin¹, Danilo Vojvodić¹¹ Faculty of Medicine, Military Medical Academy, University of Defense, Belgrade, Serbia

Background: HIV infection causes profound immune dysregulation, primarily through CD4⁺ T lymphocyte depletion and persistent immune activation. Myeloid-derived suppressor cells (MDSCs) have recently been recognized as key immunoregulatory cells. They represent a heterogeneous population of immature myeloid cells with strong capacity to suppress T cell proliferation and cytokine production, often mediated via PD-L1 expression and arginase activity. While their role has been described in cancer and other chronic infections, their contribution to HIV pathogenesis, clinical manifestations, and therapy response remains insufficiently defined.

Aim: The aim of this study was to investigate the role of MDSCs and PD-L1 expression in HIV-positive patients, in relation to clinical symptoms, CD4⁺ T cell count, and type of antiretroviral therapy (ART).

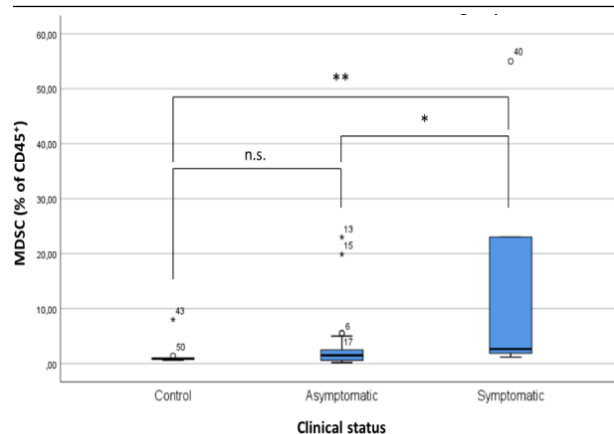
Methods: Peripheral blood samples from 41 HIV-positive patients and 10 healthy controls were collected. Flow cytometry was performed to quantify MDSCs (absolute counts and percentage of CD45⁺ cells), PD-L1 expression on MDSCs, and CD4⁺ T cell counts. Patients were stratified by clinical status (symptomatic vs. asymptomatic), CD4⁺ stage (<200/μl, 200–500/μl, >500/μl), and ART regimen (PI+NRTI, PI+NNRTI, NRTI+NNRTI, or no therapy). Statistical analysis was carried out using IBM SPSS v26. Normality of data was evaluated with the Shapiro–Wilk test. Depending on distribution, comparisons were made using t-test, ANOVA, Mann–Whitney U, or Kruskal–Wallis test. Correlations between continuous variables were assessed using Spearman's rho.

Results: MDSC percentages were significantly higher in HIV patients compared to healthy controls ($p = 0.007$). Within the HIV group, symptomatic patients showed elevated MDSC levels ($p = 0.045$) and lower CD4⁺ counts ($p = 0.032$) than asymptomatic individuals. Stratification by CD4⁺ stage revealed a trend toward increasing MDSC percentages with advancing disease, though this did not reach significance ($p = 0.077$). No differences were observed between ART regimens in relation to MDSCs, CD4⁺ counts, or PD-L1 expression (all $p > 0.5$). Moreover, PD-L1 expression on MDSCs did not correlate with CD4⁺ counts or MDSC percentages ($p > 0.1$).

Conclusion: Elevated MDSC levels distinguished HIV patients from healthy controls and were further increased in symptomatic cases, suggesting a contribution to clinical manifestations of immune imbalance. Although PD-L1 expression did not correlate with disease stage or therapy type, MDSCs provide insights beyond CD4⁺ counts in assessing immune status. These findings highlight the potential of MDSCs as early immunosuppressive markers in HIV. Larger studies

incorporating functional assays are warranted to validate their diagnostic and therapeutic relevance and to explore whether therapeutic modulation of MDSCs could open new avenues in the management of chronic HIV infection.

Figure 1. MDSC% in Controls and HIV Patient Subgroups



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

64. **Early Clues, Early Cure: Evaluating the Utility of the Hematological Scoring System in the Early Diagnosis of Neonatal Sepsis.**Fahed Mohammed¹, Farin Ashraf¹, Gayathri G Nair¹¹ MES Medical College, Kerala, India

Background: Neonatal sepsis is a clinical syndrome characterised by signs of circulatory compromise due to microbial invasion of the bloodstream in the first month of life. It is a leading cause of neonatal mortality and is a global health concern. Early identification is crucial. The "gold-standard"- blood culture - has low sensitivity and is time-consuming. In resource-limited settings, these factors frequently lead to empirical antibiotic use, contributing to antimicrobial resistance.

Rodwell et al. introduced a Hematological Scoring System (HSS) as an adjunctive tool for early diagnosis of neonatal sepsis using various hematological parameters. This observational diagnostic accuracy study aims to establish the reliability of HSS as a diagnostic marker, with potential for global use in the early identification of neonatal sepsis.

Methods: This study is set in a tertiary care centre in Kerala, India. 60 neonates admitted to the NICU were included.

The Hematological Scoring proposed by Rodwell et al is given in the table. Sepsis likelihood was interpreted as follows: ≤ 2 (less likely), 3–5 (probable), and > 5 (very likely).

Sensitivity, Specificity, PPV and NPV of each HSS parameter as well as CRP was assessed using IBM SPSS Statistics, ver. 30.

Results: The study included 60 cases divided into three groups.

1. Definite sepsis (5/60): Blood culture is positive for sepsis.
2. Probable sepsis (25/60): Blood culture is negative but signs or elevated CRP suggestive of infection.
3. No sepsis (30/60): Negative blood culture, normal CRP levels and absence of any signs of infection.

The most common organisms isolated from the definite sepsis group were *Staphylococcus Aureus* and *Acinetobacter Baumannii*.

Performance of the hematological parameters were analysed by two different approaches:

1. Definite sepsis group vs. No definite sepsis group (Probable sepsis and No sepsis).
2. Definite and Probable sepsis groups vs. No sepsis group.

In both the approaches, total neutrophil count was the most sensitive parameter with the highest NPV, while I:M ratio was the most specific with the highest PPV.

Total leukocyte count, Total neutrophil count, Immature neutrophil count, I:M Ratio and Platelet Count were found to be statistically

significant ($p < 0.05$). Furthermore, a significant association was found between CRP levels and HSS scores.

Conclusion: The HSS is a simple, feasible and cost-effective tool which can be utilised for the early diagnosis of neonatal sepsis. It can also aid in preventing antibiotic resistance as a result of exposing infants to unnecessary antibiotics. On a broader scale, the HSS can contribute to lowering neonatal mortality rates.

Table: The Hematological Scoring System proposed by Rodwell et al.

Parameters	Value	HSS
Total leucocyte count	$\leq 5,000/\mu\text{L}$ $\geq 25,000/\mu\text{L}$ (at birth) $\geq 30,000/\mu\text{L}$ (12-24hrs) $\geq 21,000/\mu\text{L}$ (day 2 onwards)	1
	Normal	0
Total neutrophil count	No neutrophils	2
	Increased/Decreased	1
	Normal	0
Immature neutrophils	Increased	1
	Not increased	0
Immature-to-total neutrophil ratio	> 0.2	1
	< 0.2	0
Immature-to-mature neutrophil ratio	> 0.3	1
	< 0.3	0
Degenerative changes	Present	1
	Absent	0
Platelet count	$< 150,000/\mu\text{L}$	1
	$> 150,000/\mu\text{L}$	0

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

65. Perceived Knowledge, Perception and Readiness of University Students regarding Sustainability Education and Practice

Pui Ee Seow¹, Pui Ee Seow

¹ Medical School, Malaysia

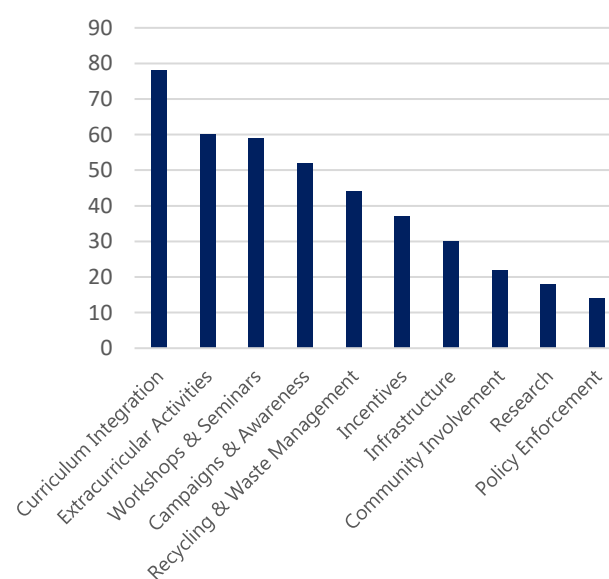
Background: Education for Sustainable Development (ESD) empowers individuals to acquire the knowledge, skills, attitudes, and values necessary for fostering a sustainable future. As global concerns regarding climate change, resource depletion, and environmental degradation intensify, higher education institutions play a vital role in preparing students to adopt and champion sustainable practices. This study aims to assess perceived knowledge, perception, and readiness toward sustainability education and practice among IMU University students, with the goal of informing institutional strategies and designing impactful educational interventions.

Methods: A cross-sectional study was conducted among students enrolled in foundation, undergraduate, and postgraduate programs in IMU University. Data were collected using a validated, self-administered online questionnaire disseminated through institutional emails and social media platforms. The online survey included a combination of closed-ended multiple-choice questions, Likert scale ratings, and open-ended questions. A minimum sample size of 426 students was calculated to ensure representativeness, factoring in a 20% non-response or attrition rate. The survey assessed students' demographic characteristics, prior exposure to sustainability content, perceived knowledge of sustainability concepts, attitudes toward environmental and planetary health, and readiness to engage in sustainability initiatives. Data were analyzed descriptively to summarize trends and identify potential gaps in knowledge and participation.

Results: A total of 427 respondents participated in the study; 328 were female, and 351 were Malaysian. The majority (83.6%) were enrolled in undergraduate programs, and 81% had not attended any course related to sustainability. In terms of environmental and planetary health, 92.3% and 87.2% of respondents, respectively, rated their knowledge as fair or good. Climate change, pollution, and deforestation were identified as the key sustainability challenges facing the planet. Over 89% of respondents were very concerned about climate change, while over 74% were concerned about biodiversity loss challenges. Nearly 64% of respondents agreed that sustainability education should be a required part of the university's curriculum. Most preferred workshops or seminars to include sustainability education in the curriculum, while others preferred extracurricular activities or integration into existing courses. Approximately 83% of respondents expressed willingness to participate in sustainability initiatives. The most commonly suggested campus-level changes to promote sustainability were recycling improvements, reducing the use of single-use plastic, and energy conservation. The level of concern of the respondents about current sustainability challenges was measured. The maximum possible score was 24 and the median score was 13.

Conclusion: The present study revealed that respondents demonstrated generally good knowledge and perceptions regarding environmental health and sustainability issues. However, fewer than 20% had undertaken formal courses on these topics. Hence, courses should be introduced and offered through workshops, symposia, or practical sessions to strengthen understanding and engagement. Student engagement in sustainability-related initiatives on campus should be actively promoted and further strengthened. Findings from this study can guide the university in integrating sustainability into its curriculum and fostering sustainable practices among students. By highlighting knowledge gaps and attitudes, the study will contribute to the development of targeted educational strategies and institutional policies.

Figure 1. ways to incorporate sustainability education and practice in universities.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

66. **Cross Sectional Study On Prevalence Of Insomnia And Factors Contributing To Insomnia In Adolescent School Students**Athul A.,¹ Athira K Raveendran,¹ Athira Mangalan,¹ Athira Manoj,¹ Athira Sudhakaran.¹¹MBBS Graduate, KUHS/GMC/TVPM/ India

Background: Insomnia- the unwelcome experience of difficulty in falling asleep, difficulty in maintaining sleep or early morning awakening with inability to resume sleep is common in all age groups and impairs quality of life. Untreated insomnia has severe impact on health and socioeconomy. These include subjective and objective daytime consequences like fatigue or malaise, poor attention and concentration, social and vocational dysfunction, mood disturbances, daytime sleepiness, reduced energy, tension etc. Insomnia is highly related to advancing age, family history of insomnia, female sex, lifestyle, emotional background, worry and stress; each of which is important to assess among the community, especially centering the adolescent age group. Since there are no known existing studies on the same topic in the authors setting and the available studies show wide variations in the prevalence of insomnia, they would like to investigate that.

Objective: Primary objective: To study the prevalence of Insomnia in adolescent school children in Thiruvananthapuram Corporation, Kerala, India. Secondary objective: To find out the factors contributing to insomnia among the study population-

Methodology: Study design: Cross sectional study. Study setting: Higher secondary schools of Thiruvananthapuram Corporation, Kerala, India. Study population: Adolescent students of two schools of Thiruvananthapuram Corporation. Data collection and analysis: Schools were approached through proper channels. Permissions were taken from school authorities before study. Questionnaires based on Insomnia Severity Index were distributed among the study population. The questionnaire consists of two sections, one based on a standard Insomnia severity assessment question and second one includes questions that are directed towards the establishment of relation between insomnia and certain factors, in which the researchers are interested in. A score based on all of this is determined and the demographic data is analyzed using spss software. The Chi square test is used to describe the relations.

Results: 165 candidates took part in the study. On analysis 94 students had no clinically significant insomnia, 51 students had subthreshold insomnia, 20 students had clinical insomnia of moderate severity, and no students had severe clinical insomnia. On analysis, there was significant association between gender of students and insomnia. It was found to be more associated with females compared to males. From the study they also reached the conclusion that the following factors contribute to insomnia among adolescent school children: problems in family, academic stress (mainly, pressure from parents) and substance use (alcohol, cigarettes, drugs). Smart phone use showed no significance whereas occurrence of insomnia increased with increasing average screen time per day.

Conclusion: Sleep symptoms often go under reported and under diagnosed and can have a significant impact on long term outcome. In some cases they are environmental or related to lifestyle factors. Therefore it is important to identify these factors. Early detection of insomnia and its symptoms is also an important step to avoid

secondary psychiatric disorders. This study provides preliminary data on sleep quality and factors contributing to insomnia, which maybe used to guide sleep hygiene promotion and intervention among adolescent school students.

Table1. Association Between Exposure Variables and Insomnia Severity Levels.

Exposure variable	No clinically significant insomnia (%)	Subthreshold insomnia (%)	Clinical insomnia of moderate severity (%)	Chi square	P value
Gender				12.922	0.001
- Male	68	24.7	7.2		
- Female	41.2	39.7	19.1		
Problems in family				23.950	0.000
- Yes	8.7	21.6	55		
- No	91.3	78.4	45		
Average screen time per day (hrs)				44.152	0.000
- ≤ 5	92.3	82.3	75		
- > 5 – ≤ 12	7.7	17.7	25		
Academic stress				33.763	0.000
- Yes	47.9	88.2	95		
- No	52.1	11.8	5		
Substance use				13.685	0.005
- Yes	28.6	14.3	57.1		
- No	58.2	31.6	10.1		

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

67. **Impact of War on Burnout among Medical Students at Al-Neelain University in Sudan, 2024**Enas Seyed,¹ Mohammed Yhya,¹ Ruaa El.Walid,¹ Assma Gamie,¹ Noha Sofyan.¹¹Al Neelain University Medical School, Sudan

Background: Burnout, characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, is relatively frequent among medical students due to the demanding nature of medical education. In conflict zones, such as Sudan, the challenges are exacerbated by war, which disrupts training and increases psychological stress. Despite its potential long-term consequences on individuals and healthcare systems, burnout among medical students in these settings remains underexplored.

Aim: This study aimed to assess the prevalence of burnout among medical students at Al-Neelain University in Sudan, with a focus on the impact of war on burnout levels. Additionally, it evaluated the students' coping mechanisms and resilience in overcoming the challenges posed by conflict and academic disruptions.

Methods: A cross-sectional study was conducted among 259 medical students at Al-Neelain University, selected using a stratified sampling technique. Data were collected through an online, close-ended questionnaire comprising three sections: sociodemographic and training-related questions, a burnout assessment using the Maslach Burnout Inventory-Student Survey (MBI-SS), and an evaluation of resilience using the Brief Resilient Coping Scale (BRCS). The data collected were analyzed using Microsoft Excel and the Statistical Package for the Social Sciences (SPSS).

Results: Of the total of 259 medical students at Al-Neelain University, the prevalence of burnout using the two-dimensional definition was 18.5%, while 8.1% met the criteria for three-dimensional burnout. High emotional exhaustion and cynicism were observed in 31.7% and 32.8% of students, respectively, whereas 30.1% had low academic efficacy. Burnout was significantly associated with poor academic performance, inadequate social support, and limited internet access ($p < 0.001$). The Brief Resilient Coping Scale (BRCS) showed that only 19.3% of students had high resilience coping, while 45.9% had low resilience coping. Resilience showed a statistically significant moderate positive correlation with academic efficacy ($r = 0.487$, $p < 0.001$) and a weak negative correlation with cynicism ($r = -0.226$, $p < 0.001$). While burnout had a limited direct impact on clinical training for fifth-year students, conflict-related disruptions, such as reduced access to hospitals and inconsistent mentorship, posed significant challenges to their educational experiences.

Conclusion: Medical students at Al-Neelain University exhibited an alarming prevalence of burnout, compounded by academic and conflict-related challenges. It demonstrated the urgent need for interventions to reduce burnout, enhance resilience, and improve resource access, which are essential to support students' well-being and ensure training continuity, especially in conflict zones like Sudan.

Table 1. Prevalence of Burnout, sub-scales, levels among medical students at Al-Neelain University (n=259).

	Frequency (n)	Percent (%)
Emotional Exhaustion (High)	82	31.70%
Cynicism (High)	85	32.80%
Academic Efficacy (Low)	78	30.10%
Burnout status (≥ 1 dimension)	224	86.50%
Burnout status (2 dimensions)	48	18.50%
Burnout status (3 dimensions)	21	8.10%

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

68. Ochratoxin A and Citrinin Contamination in Rice, Oats and Wheat Flour in Michoacán, Mexico: an External Biomonitoring Study

Maria Elena Asdrubali,¹ Alessandro Perera,¹ José Ángel Patricio Abarca Figueroa.¹

¹ University of Bologna, Bologna, Italy

Background: Ochratoxin A (OTA) and citrinin (CIT) are classified as nephrotoxic mycotoxins, compounds naturally produced by some saprophytic filamentous fungi of the *Aspergillus* and *Penicillium* genera. These two mycotoxins are of particular concern because of both their ability to contaminate a vast spectrum of foods and their thermal stability of up to 250° C, thus representing a concrete threat for human health. Progressive decline in kidney function, chronic kidney disease, interstitial nephritis and Balkan Endemic Nephropathy are listed as long-term health risks.

Aim: Since Mexico does not have regulations on OTA and CIT contamination limits in food, an external biomonitoring study is needed. The main objective of this study is to determine whether and to which extent selected food matrices are contaminated with ochratoxin A and citrinin.

Methods: Commercial rice, oats and wheat flour, purchased from large-scale retail stores in Morelia (Michoacán), were selected as food matrices. In order to assess mycotoxins' concentration, extracts of these cereals were needed. The process of extraction began by finely grinding and sieving the cereals until a homogeneous powder was obtained. Three replicates of each cereal were prepared by mixing 20 grams of powder with 100 mL of 80% acetonitrile. To optimize extraction, samples were placed on a rotatory magnetic plate for 15 minutes, centrifuged at 1980 *g* for 5 minutes. The supernatant was then collected, concentrated by rotary evaporation, and stored at 4°C until analysis. For detection, sensitive and highly specific techniques were applied: thin-layer chromatography (TLC) and enzyme-linked immunosorbent assay (ELISA). TLC was employed for qualitative analysis, while ELISA was used for quantitative analysis.

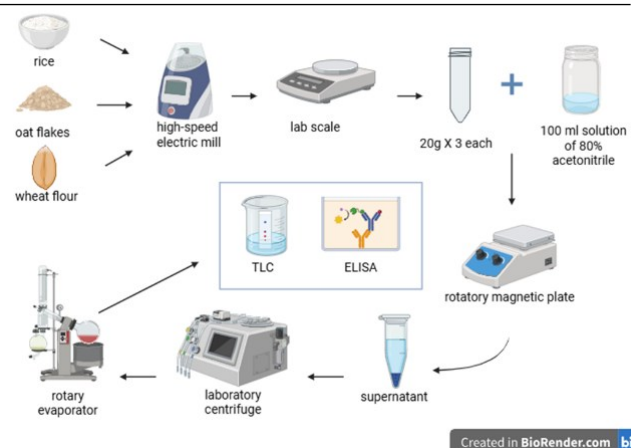
Results: TLC results showed considerable ochratoxin A and citrinin contamination in all the analyzed samples (rice, oats and wheat flour), as well as potential occurrence of other toxins. Further investigation is needed to assess other mycotoxins' contamination.

At the time of writing, ELISA has not been performed. Nevertheless, since TLC has already detected the investigated mycotoxins, we are confident about the positive results that ELISA will yield, allowing us to confirm both ochratoxin A and citrinin presence in the samples and to quantify their concentration.

Conclusion: Overall, the experiment revealed ochratoxin A and citrinin contamination in commercial food (rice, oats and wheat flour) from Michoacán, Mexico, through thin-layer chromatography. When conducted, ELISA will provide more data regarding the specific concentrations of each mycotoxin in all the samples analyzed. Further

investigation is needed to determine the impact of mycotoxins' exposure to humans. Moreover, a biomonitoring external study for other contaminating mycotoxins should be conducted.

Figure 1: Diagram of Cereal Sample Preparation and Analysis using TLC and ELISA



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

69. **Green Synthesis of Streptomycin-Conjugated Silver Nanoparticles and their Efficacy Against Multi Drug-Resistant *Staphylococcus aureus***

oura Rajeshwara,¹ Raghu S. Holalkere,² Raghavendra S. Nagaraju,² Rajeshwara Achur,² Halesh L.H.¹

¹ Shimoga Institute of Medical Sciences, India

² Kuvempu University, India

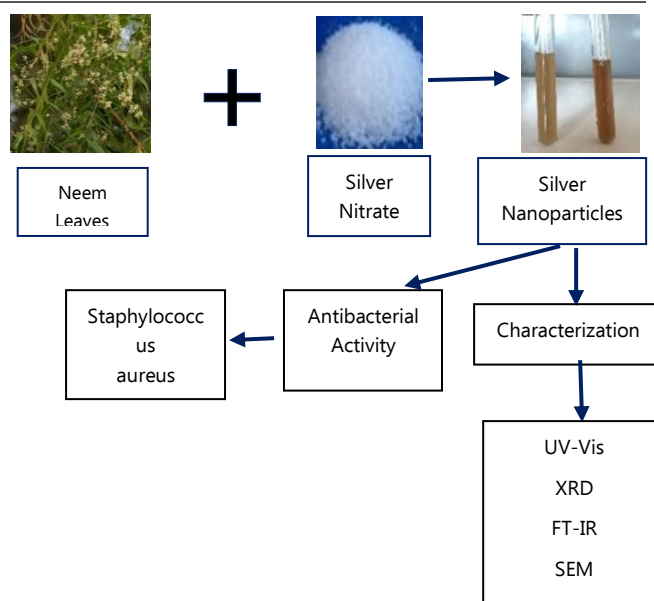
Background: The emergence of multidrug resistant (MDR) pathogenic microbes against typical antibiotics is a global problem. Novel and effective strategies are being explored to treat various disease causing MDR pathogens. In this study, we prepared and tested the efficacy of antibiotic-conjugated silver nanoparticles against MDR-pathogens.

Methods: We used the plant extract for the green-synthesis of Silver nanoparticles (AgNPs) as well as Streptomycin-conjugated AgNPs. The aqueous *Azadirachta indica* (Neem) leaf extract was used for the synthesis of AgNPs. The synthesized nanoparticles were characterized by various techniques and the antimicrobial activity was determined by agar-well plate method.

Results: The green synthesized Streptomycin-conjugated AgNPs were characterized by different analytical techniques to establish the nanoparticle formation, size, shape and the presence of functional groups. The UV-visible spectra indicating absorbance at 450 and 440nm confirmed the formation of AgNPs and St-AgNPs, respectively. The scanning electron microscopic images showed that AgNPs and St-AgNPs are spherical in shape and the size in the range of 21-30 nm and 29-43 nm, respectively. The X-ray diffraction pattern of AgNPs and St-AgNPs showed peaks establishing the crystalline nature of the particles with characteristic peaks of 2θ for (111), (200), (220) and (311) planes. The Fourier Transform Infrared spectrum of St-AgNPs shows distinct peaks at 2980.47 (C-H bond), 1723.37 (C=O bond), 1606.89 (C=C bond), 1507.63 (N-O group), 1445.33 (C-H), 1269.02 (C-O bond), 1019.19 (C-O bond), and 812.43 cm (C-C bond) which corresponds to the functional groups present in both AgNPs and the conjugated antibiotic streptomycin. Further, the antimicrobial activity of AgNPs and St-AgNPs was examined by using the agar-well plate method against MDR *Staphylococcus aureus*. The antimicrobial activity analysis showed that St-AgNPs exhibited ~50% higher activity as compared to streptomycin alone.

Conclusion: The results of our study indicate that the green synthesized antibiotic conjugated AgNPs could be used to treat MDR *Staphylococcus aureus* and potentially other MDR pathogens as well. Further detailed studies are in progress to confirm the utility of these antibiotic conjugated AgNPs.

Figure 1. Green Synthesis Workflow of Silver Nanoparticles using Neem Leaves



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

70. **Modulatory Role of Pre-orthostatic Cold-Water Ingestions on the Electroencephalogram**Mayowa Jeremiah Adeniyi,¹ Awosika Ayoola.²¹ Department of Physiology, University of Rwanda, Nigeria² College of Medicine, Illinois State University, USA

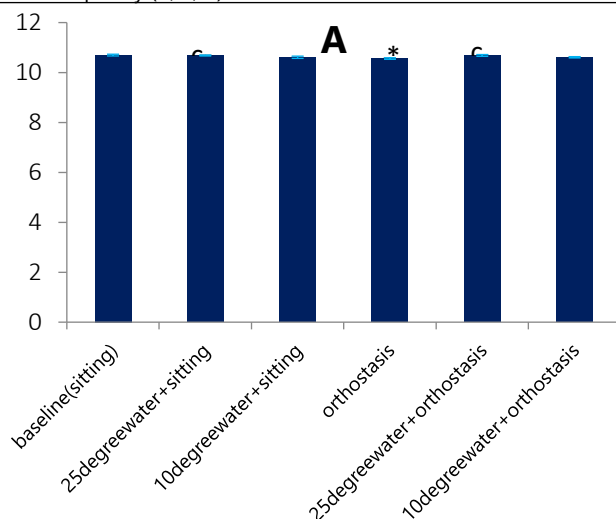
Background: Literature is replete with the adverse outcomes of the cold impacts of climate change. The aim of the study was to investigate the effect of pre-orthostatic cold water ingestions on the electroencephalogram in male individuals.

Methods: 35 apparently healthy young males averaging 19.5 years satisfied the inclusion criteria and were selected for the study. Participants ingested 500 milliliters of portable commercial water at 25°C and 10°C five minutes prior to sitting or orthostasis. Orthostasis lasted for minutes. Electroencephalogram (EEG) was recorded using PowerLab 26T with eye opened. On assumption of erect position, EEG recording was started and continued for 20 minutes during which the standing lasted.

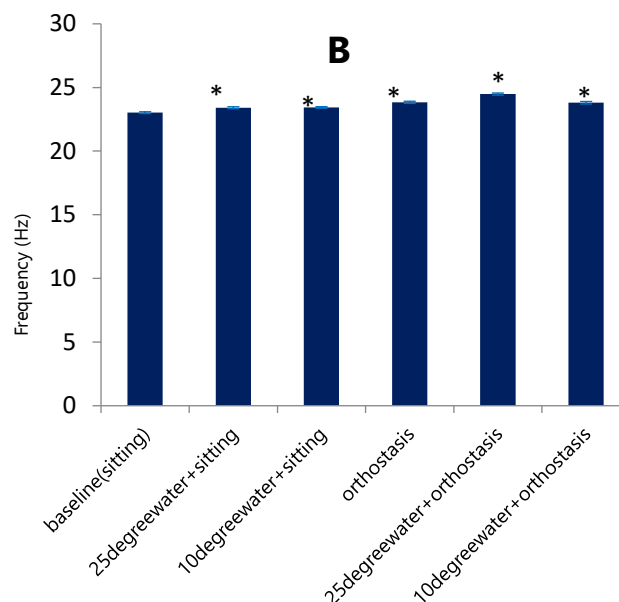
Results: Ingestion of 25°C or 10°C water prior to orthostasis has no significant effect on alpha wave frequency when compared to baseline. Beta wave frequency and alpha/beta ratio were significantly higher and lower in participants who ingested 25°C prior to orthostasis when compared to those who ingested 25°C prior to sitting respectively. Beta wave frequency and alpha/beta ratio also increased and decreased respectively in participants who ingested 10°C prior to orthostasis when compared to those who ingested 10°C prior to sitting. Ingestion of 25°C prior to orthostasis caused higher beta wave frequency and lower alpha/beta ratio when compared to participants who ingested 10°C prior to orthostasis.

Conclusion: The findings of the study demonstrated that ingestion of 25°C water prior to orthostasis was associated with relatively greater cortical activation.

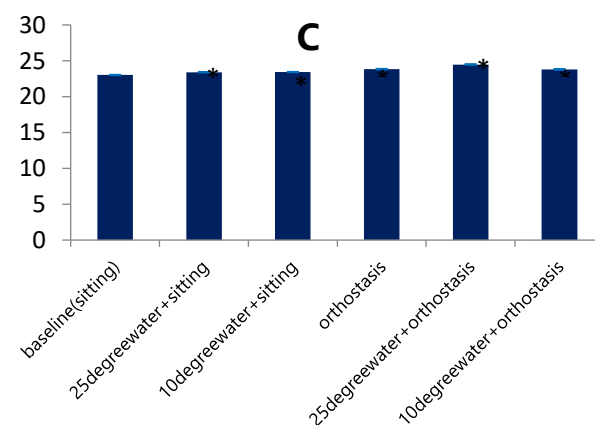
Figure 1: Effect of Pre-Orthostasis Cold Water Exposure on Alpha Wave Frequency (A, B, C)



Legend: Showed that orthostasis significantly decreased alpha wave frequency when compared to baseline. Ingestion of 25°C water prior to sitting posture significantly reduced alpha wave frequency when compared to orthostasis. Ingestion of 25°C water prior to orthostasis significantly increased alpha wave frequency when compared to orthostasis.



Legend: Showed that ingestion of 25°C water prior to sitting posture, ingestion of 10°C water prior to sitting posture and ingestion of 25°C water prior to orthostasis significantly decreased alpha wave amplitude when compared to baseline respectively.



Legend: Represents significant difference from baseline (sitting). a represents significant difference between 25degreewater+sitting and 25degreewater+orthostasis. b represents significant difference between 10degreewater+sitting and 10degreewater+orthostasis. c represents significant difference from orthostasis. d represents significant difference between 25degreewater+orthostasis and 10degreewater+orthostasis.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

71. Effects of Non-Nutritive Sweetener Mixers compared to Carbohydrate Mixers on Alcohol Pharmacokinetics and Patient-Reported Outcomes: A Systematic Review and Meta-Analysis

Shwetha Shenod,¹ Dhanikha SV,¹ Hari Sudhan S.¹

¹ PSG Institute of Medical Sciences and Research, Coimbatore, India

Background: Alcohol-associated accidents pose a major global health burden, accounting for 4.7% of all deaths and 4.6% of total disability-adjusted life years. Alcohol impairs psychomotor performance, driving ability, and risk perception. These acute outcomes are largely determined by alcohol absorption and metabolism, which in turn is influenced by gender, body composition, enzyme polymorphisms, drinking state, and co-consumed mixers. While carbonation and caffeinated mixers have shown to alter the pharmacodynamics of alcohol, the effects of non-nutritive sweetener (NNS) mixers remain underexplored. Given the increasing prevalence in the use of NNS mixers, clarifying their impact on alcohol pharmacokinetics and subjective intoxication and related outcomes is critical.

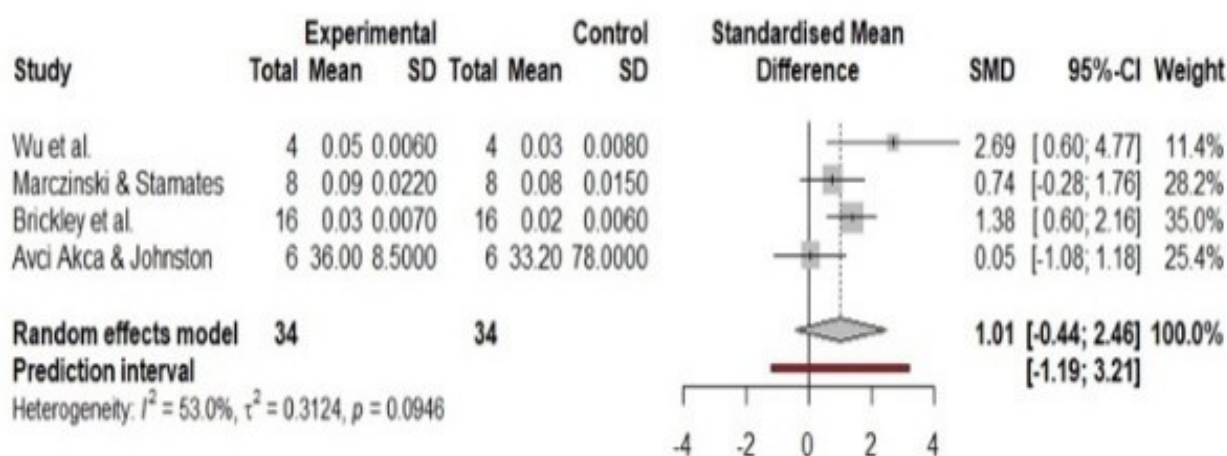
Methods: A systematic review and meta-analysis of studies obtained from three databases (PubMed, EMBASE, Scopus) was conducted in accordance with PRISMA guidelines. Primary outcomes assessed were breath or blood alcohol concentration (BrAC/BAC) and gastric emptying ($t_{1/2}$, t_{lag}). Secondary outcomes included subjective ratings of intoxication and related psychomotor tests. Risk of bias was assessed using the RoB2 tool. Standardized mean differences (SMD) was calculated for BrAC Cmax. Subgroup analysis were performed separately for the breathalyzer used, standardized ethanol dosing,

and non-nutritive sweetener composition. Heterogeneity was quantified using I^2 statistic, and sensitivity and publication bias analyses were performed when required adjusting for the small sample size.

Results: Five studies were reviewed, of which four (34 NNS vs. 34 carbohydrate (CHO)) contributed to meta-analysis. All included studies were rated as having an overall risk of bias of "some concerns". NNS mixers were associated with higher not statistically significant peak BrAC (SMD = +1.01, 95% CI = -0.44 to 2.46, $p = 0.097$; $I^2 = 53\%$). Subgroup analyses done for the type of breathalyzer used ($p = 0.1$), standardized ethanol dose ($p = 0.80$), non-nutritive sweetener content ($p = 0.17$) were not significant. Sensitivity analysis showed that the study by Akca *et al.* had a strong influence on the overall results. Gastric half-emptying time ($t_{1/2}$) with NNS mixers were observed to be shorter than with CHO mixers in two studies. Marczinski & Stamates found that alcohol with NNS mixers slowed reaction times and increased inhibition failures, indicating impaired cognitive control. Despite Brickley *et al.* observing no significant subjective differences between NNS and CHO mixers, there was a trend toward poorer vehicle control and greater risk-taking in men. Akca *et al.* reported expected alcohol-related changes in intoxication and alertness with no significant differences between mixer types.

Conclusion: Current evidence suggests that NNS mixers may accelerate gastric emptying and raise peak alcohol levels compared to CHO mixers, without proportionally increasing subjective patient-reported or similarly reported intoxication levels. This mismatch between physiological and perceived impairment highlights potential safety risks and underscores the need for further research on diet mixer use.

Figure 1. Forest Plot of Meta-Analysis for Change in BrAC Cmax in NNS Mixers Versus CHO Mixers



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH**72. Evaluating SLC11A2 Expression in Stage III Colon Adenocarcinoma: No Prognostic Signal but Coordinated Expression with SLC40A1**

Ryan Brownlee¹, Shagun Dolakia¹, Mashoor Al Ahammed¹, Aditya Birla¹, Raniya Ahmad¹, Girindra Raval¹

¹The Medical College of Georgia at Augusta University, USA

Background: Colon cancer is characterized by the uncontrollable growth of abnormal epithelial cells and is a leading cause of cancer-related mortality worldwide. Stage 3 colon adenocarcinoma involves local lymph nodes and has a 5 year survival rate of about 65-75%. In diseases associated with marked inflammation, expression of iron regulating genes has been shown to experience significant alterations and predict worse prognosis in some patients. Notable genes involved in this pathway include SLC11A2, HAMP, FTH1, and SLC40A1.

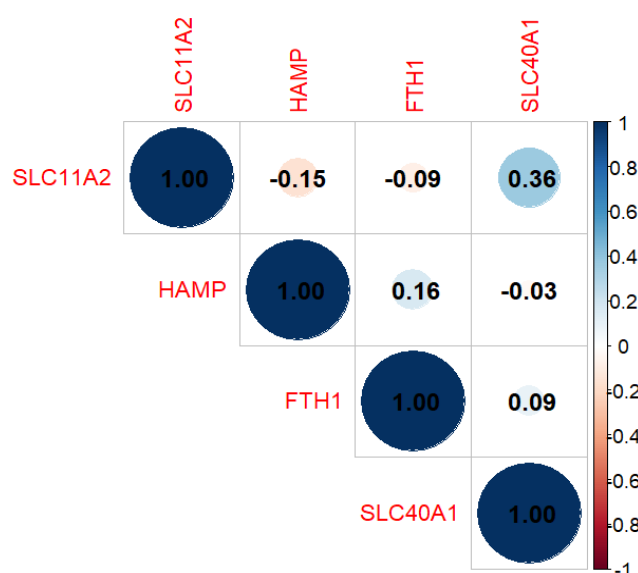
Aim: This study assessed SLC11A2's significance for predicting overall survival in stage 3 colon adenocarcinoma followed by a gene expression correlational analysis with other iron regulating genes in patients from The Cancer Genomic Atlas COAD database.

Methods: TCGA was queried for clinical and STAR counts RNA gene expression data within the TCGA-COAD project. 362 patients with AJCC stage 3 primary colon adenocarcinoma were selected. STAR RNA data was normalized using variance stabilizing transformation and patients were stratified by quartiles of expression into Q1, Q2, Q3, or Q4 groups. Additionally, patients were classified as early onset (EO) or late onset (LO) if age at diagnosis was before or after 50 years old, respectively. A Kaplan-Meier overall survival (OS) curve was created comparing survival across quartiles of SLC11A2 expression with log rank analysis assessing significance. Univariate and multivariate Cox Proportional Hazards Analysis was completed for SLC11A2 expression quartile, age, gender, and race. Linear regression testing was completed to assess colinearity of SLC11A2 expression with HAMP, FTH1, and SLC40A1.

Results: On Kaplan-Meier analysis, SLC11A2 expression was not a significant predictor of survival at any quartile. Q2 experienced the worst survival, with all other quartiles displaying similar survival. On univariate analysis, quartiles of SLC11A2 expression were nonsignificant for OS. LO patients experienced significantly worsened survival compared to EO (7.23 HR, 1.76-29.7 95% CI, $p=0.006$). On multivariate analysis, SLC11A2 expression remained a nonsignificant predictor of OS. However, LO age group remained a significant predictor of worsened survival, moreso than on univariate analysis (13.3 HR, 3.04-58.2 95% CI, $p<0.001$). Race became a significant survival predictor with African American patients surviving worse than white patients (2.07 HR, 1.15-3.70 95% CI, $p=0.015$). On correlational analysis, SLC11A2 and SLC40A1 showed a significant positive expression correlation with no other genes showing significance ($r=0.36$, $p<0.001$).

Conclusion: Regardless of SLC11A2 expression, overall survival in stage 3 colon adenocarcinoma is mediated by age and race. SLC11a2 does not appear to be a significant gene in predicting prognosis in stage 3 of this cancer. SLC40a1 and slc11a2 display a significant positive expression correlation. After accounting for SLC11A2 expression, age, and gender, African American and LO patients experience significantly worsened OS.

Figure 1. Linear Regression Testing of SLC11A2 Expression with HAMP, FTH1, and SLC40A1 Genes.



Legend: Numeric values are the Pearson's correlation coefficient with 1 being a perfect correlation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

73. Using pretreatment MRI perfusion to inform subsequent MRI perfusion

Adebola Ademola¹,¹ CUNY School of Medicine, USA

Purpose: Patients with brain metastases frequently require stereotactic radiosurgery (SRS), which offers effective local control while avoiding the neurocognitive toxicities of whole brain radiation therapy. Increasing enhancing lesions after SRS may represent recurrent metastasis or radiation necrosis. MR perfusion is commonly used to distinguish between these entities, with recent meta-analyses showing good correlations between hyperperfusion and recurrent metastasis. However, some metastases do not show hyperperfusion before SRS due to innate tumor properties rather than technical limitations. We hypothesize that pretreatment MR perfusion can improve perfusion interpretation at suspected progression, where absent hyperperfusion before treatment suggests perfusion is an unreliable marker for recurrent metastasis.

Materials and Methods : We retrospectively reviewed patients with systemic cancers and brain metastases who underwent SRS, had MR perfusion scans ≤ 30 days before SRS, and later developed suspected progression (> 30 days post-SRS) with repeat MR perfusion ≤ 30 days before surgical resection. Histopathology served as the reference standard for determining recurrent metastasis versus necrosis. One metastasis was evaluated per patient. We analyzed dynamic contrast enhanced T1-weighted MR perfusion images with automated arterial input function to calculate Ktrans maps (transfer constant coefficient) and VP maps (plasma volume). The entire enhancing lesion was segmented using a semi-automated tool, propagated onto Ktrans and VP maps, and used to calculate normalized ratios (rKtrans, rVP). Absent hyperperfusion was defined as ratio < 1.5 . Statistical analysis used t-test where $p=0.05$.

Results: Initial perfusion results before SRS across the entire cohort showed median rKtrans=1.7 (range: 0.20-29.56) and median rVP=2.1 (range: 0.275-7.536). Median metastasis size was 3.0 cc (range: 0.369-10.431). We identified 22 patients with growing enhancing lesions and repeat perfusion a mean 283.7 days after SRS. Histopathology showed 14 (64%) recurrent tumors and 8 (36%) necrosis. Recurrent metastases showed median rKtrans=7.4 (range: 0.58-221.13) and median rVP=3.1 (range: 0.48-6.10), while necrosis showed lower median rKtrans=1.6 (range: 0.18-198.47) and median rVP=0.9 (range: 0-6.40), $p=0.08$.

Among recurrent metastases without hyperperfusion (ratio < 1.5) at repeat imaging ($n=6$), pre-SRS perfusion showed rKtrans=10.38 (range: 0.35-15.27) and rVP=2.81 (range: 0.71-5.22). The remaining recurrent metastases (ratio ≥ 1.5) showed pre-SRS rKtrans=6.17 (range: 0.49-13.04) and rVP=3.94 (range: 0.20-29.56).

Conclusion: Our results confirmed MR perfusion utility in distinguishing recurrent metastasis from necrosis. Incorporating pre-SRS perfusion improved correlations and offers a novel approach for

better informed management. Absent hyperperfusion in growing lesions that lacked hyperperfusion before treatment should be considered unreliable. Further patient incorporation and analysis are ongoing.

Table 1: Initial Results Suggest Utility of MR Perfusion to Distinguish Between Recurrent Metastasis and Necrosis in Treated Patients.

Pre-SRS MRI		
Ratios	Entire Cohort	Non-hyperperfused (ratio < 1.5)
rKtrans	1.7	0.4
range	(0.2-29.6)	(0.4-0.5)
rVP	2.1	0.7
range	(0.4-7.5)	(0.2-1.5)

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

ORIGINAL RESEARCH

74. **How is Hypertension Associated with the Risk of Dementia among Adults living in High-Income Countries: A Systematic Review and Meta-Analysis**Feyi Ayanlowo,¹ Faithful Miebaka Daniel,² Erika Kispeter.³¹BASc, MSc Public Health. London School of Hygiene and Tropical Medicine (LSHTM), London, England.²MBBCh, MSc Public Health. London School of Hygiene and Tropical Medicine (LSHTM), London, England, First-On Call Initiative, Port-Harcourt, Nigeria.³Research Fellow at the London School of Hygiene and Tropical Medicine - ESRC Centre for Care

Background: Dementia is a major public health challenge in high-income countries (HICs). Hypertension is a modifiable risk factor for dementia, yet the timing of exposure and dementia subtype-specific associations remain uncertain. This meta-analysis quantifies the association between hypertension and dementia risk in HICs and examines life-course timing (midlife and late-life) and dementia subtypes.

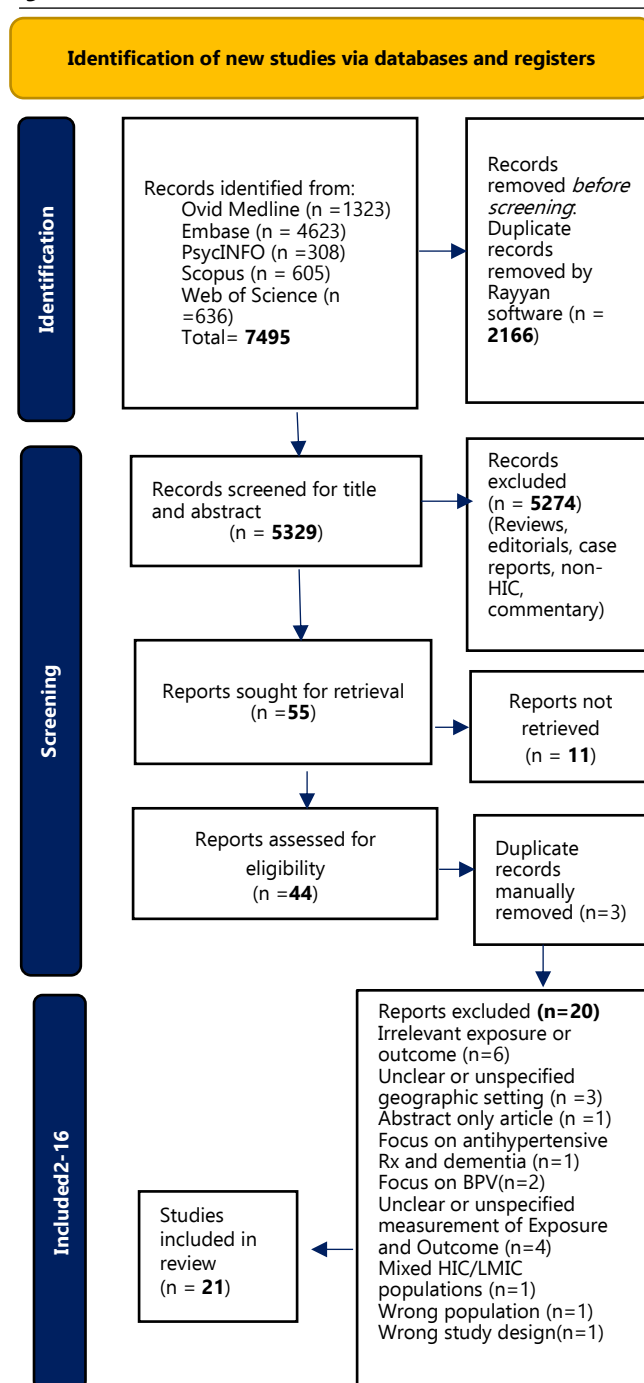
Methods: Systematic searches on OVID Medline, Embase, PsycINFO, Scopus and Web of Science (from inception to July 2025) identified 21 cohort studies. Four studies were meta-analyzed to quantify the association of midlife hypertension and all-cause dementia risk. The remaining studies were narratively synthesized using the SWiM guidelines. Screening and data extraction and analysis were done in accordance with PRISMA guidelines. Study quality was appraised with the JBI checklist; risk of bias was assessed with ROBINS-E and visualized using ROBVIS. Additionally, a Directed Acyclic Graph was constructed to map hypothesized causal pathways between hypertension and dementia, and to identify key confounders, particularly given the complex life-course interactions between these conditions.

Results: Twenty-one cohort studies, with sample size ranging from 1,462 to 848,505, follow-up between 8 to 37 years, and participant mean ages from 30-95 years. Study populations were largely homogeneous, consisting predominantly of white participants in Europe, the USA, and Australia, and Asian participants from Japan and Korea. Ethnic minority and socioeconomic status were not reported in the included studies. Single-country studies were conducted in the United Kingdom, USA, Finland, Norway, Sweden, Japan, South Korea,

and Australia. One multi-cohort study included seven cohorts across five countries (United States, Sweden, Germany, Netherlands, and Spain), and another study included two cohorts from two countries (Netherlands and Sweden). Meta-analysis of four studies showed midlife hypertension increases the risk of dementia by 63% (HR 1.63, 95%CI:1.37-1.89; I²=0%). Narrative synthesis of the remaining 17 studies revealed that midlife hypertension is associated with dementia risk especially with vascular dementia (VaD). Heterogeneous findings were reported for late-life hypertension and dementia risk (null, inverse and U-shaped). Reverse nocturnal BP dipping increased dementia risk. Genetically elevated BP was found to be causal through Mendelian randomization. Evidence on antihypertensive therapy were mixed, with BP decline preceding dementia onset. Most studies had a moderate-to-serious the risk of bias due to confounding and exposure misclassification.

Conclusion: Midlife hypertension consistently increases dementia risk, making it a critical public health priority for reducing dementia burden in HICs. In contrast, late life hypertension-dementia associations are heterogeneous, reflecting complex life-course dynamics and highlighting evidence gaps that require further research.

Figure 1. PRISMA flowchart of reviewed literature



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

75. Prevalence and prognostic significance of sodium levels in adults with traumatic brain injury: A meta-analysis

NagaVenkata Priya Sri Harshitha Somarouthu.¹

¹ Apollo institute of medical sciences and research, Hyderabad, India

Background: Traumatic Brain Injury (TBI) is one of the leading causes of morbidity and mortality worldwide. Sodium disturbances occur commonly after traumatic brain injury and causes many complications. This study is aimed at determining prevalence and prognosis of sodium levels in adult with traumatic brain injury.

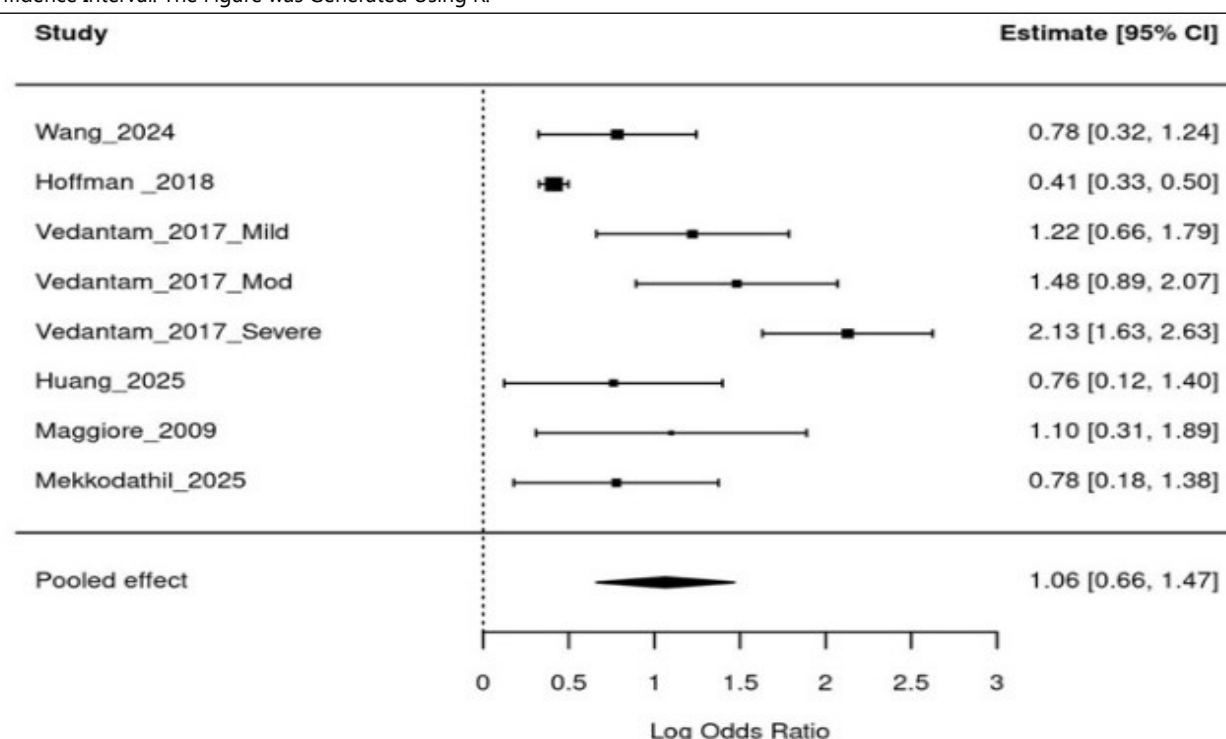
Methods: A meta-analysis was performed following PRISMA guidelines. A systematic search was conducted at PubMed and Google Scholar from 2009 to 2025 for studies reporting sodium

disturbances in adults with traumatic brain injury. Risk of bias was assessed using Newcastle-Ottawa Scale (NOS).

Results: A total of 8 studies with 94,874 patients were involved. Data was analyzed using R software (version 4.5.1). The studies suggest that hypernatremia was associated with increased risk of mortality (OR 2.9 [95% CI 1.939-4.332] p-value <0.0001, I² = 85.05%) and worsened outcomes. Limited data on hyponatremia is not sufficient to make pooled analysis but few studies suggests that it is associated with increased severity and worsened outcomes.

Conclusion: Hypernatremia is associated with increased risk of mortality and poorer outcomes. This study emphasizes the importance of incorporating sodium monitoring into standardized management protocols.

Figure 1. Forest Plot Showing Association Between Hypernatremia and Mortality in Adults with Traumatic Brain Injury. Mod = Moderate, CI = Confidence Interval. The Figure was Generated Using R.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

76. Polypharmacy and Outcomes in Elderly Patients with Heart Failure: A Meta-Analysis

Minahil Akbar¹, Sandi Assaf¹¹ SHSU College of Osteopathic Medicine, USA

Background: Polypharmacy, commonly defined as the use of five or more medications, is highly prevalent among elderly patients with heart failure. While guideline-directed therapy improves survival, excessive or inappropriate medication use may increase mortality, hospitalization, and treatment burden.

Aim: This study aimed to evaluate the association between polypharmacy and clinical outcomes in elderly patients with heart failure, including mortality, hospitalization, and quality of life.

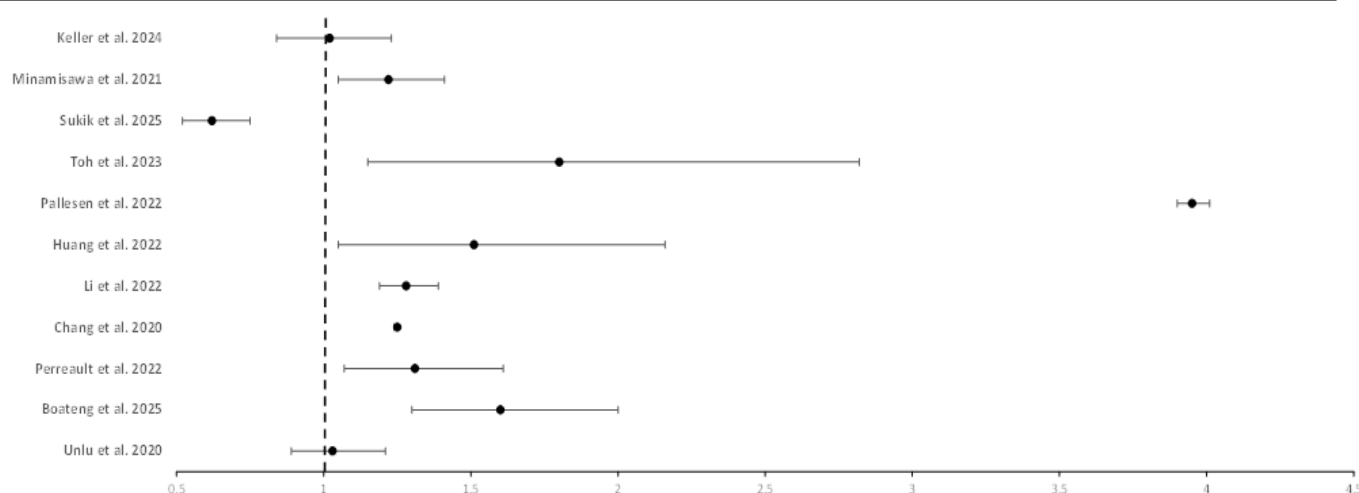
Methods: We conducted a systematic literature search in PubMed, Cochrane, and Scopus to identify observational studies assessing the impact of polypharmacy (defined as ≥ 5 medications) on elderly patients (≥ 65 years) with heart failure. Search strategies combined keywords (e.g., "heart failure", "polypharmacy") and subject headings (e.g., MeSH). The initial search yielded a total of 1,082 records. Studies were excluded if they were narrative reviews, case reports, or did not report quantitative outcomes of interest, such as mortality or hospitalization rates. After removing duplicates, titles and abstracts were screened based on predefined inclusion criteria. Following a full-text review of potentially eligible articles, 38 studies were included in the final systematic review, representing a pooled population of >250,000 participants. Of these, 11 studies provided sufficient quantitative data as Hazard Ratios with 95% Confidence Intervals and were included in the final meta-analysis for mortality and hospitalization. Findings from the remaining studies were synthesized

narratively. Two reviewers independently screened, extracted data, and assessed study quality. A random-effects model was used to pool hazard ratios (HRs) and 95% confidence intervals (CIs). Statistical heterogeneity was assessed using the I^2 statistic. Subgroup analyses were performed by medication type (heart failure-specific vs. non-cardiovascular), setting (community vs. hospital), and frailty status.

Results: Polypharmacy was present in >70% of elderly patients with heart failure, with hyper-polypharmacy affecting 20–30%. Our pooled analysis, visualized in the accompanying forest plot (Figure 1), demonstrated increased all-cause mortality with polypharmacy (HR 1.38, 95% CI 1.25–1.60) and greater risk with hyper-polypharmacy (HR 2.29, 95% CI 1.80–2.70). Hospitalization risk was also elevated (HR 1.22, 95% CI 1.05–1.41; $P=0.009$), particularly when non-cardiovascular medications predominated. In contrast, studies examining guideline-directed medical therapy (GDMT) showed that appropriate polypharmacy could mitigate risk and improve survival, especially in HFpEF and HFmrEF populations. Quality of life outcomes were inconsistent, with most studies reporting no significant association; modest improvements were observed when inappropriate medications were discontinued. Frailty amplified risks of mortality and functional decline.

Conclusion: Polypharmacy in elderly heart failure patients is associated with higher mortality and hospitalization, particularly in the presence of frailty or inappropriate prescribing. However, polypharmacy driven by GDMT may confer survival benefits, underscoring the importance of medication appropriateness. Targeted deprescribing interventions and phenotype-specific management may reduce harm and improve outcomes in this vulnerable population.

Figure 1. Forest Plot of Study-Specific Effect Estimates with 95% Confidence Intervals.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)



ORIGINAL RESEARCH

77. Meta Analytic Review on The Effect of Repetitive Transcranial Magnetic Stimulation on Post-COVID 19 Memory Impairment and Related Cognitive Disorders

Hassan Khalid¹,

¹ Medical School Georgia

Background: After the emergence of SARS-CoV-2 (covid-19) there have been reported cases of cognitive impairment in patients after recovering. The symptoms may persist for months and significantly impair quality of life. Repetitive transcranial magnetic stimulation (rTMS) is a non-invasive procedure that has shown promise in improving cognitive function in existing psychiatric and neurologic conditions. It is hypothesised that by stimulating targeted regions of the brain, rTMS may improve memory by enhancing synaptic plasticity, modulating cortical excitability, and promoting neurogenesis. Due to its non-invasive nature and its potential for improving quality of life, rTMS could be a neofrontier in treating memory impairment following covid-19 but remains underexplored.

Objective: To evaluate the effect of rTMS on memory outcomes in individuals with cognitive impairment after SARS-CoV-2 infection and related neurological conditions.

Methods: Two meta analytic studies were identified by searching reputable electronic databases using predefined keywords: "rTMS", "memory impairment", "COVID-19", "MCI". All searches were conducted on September 10, 2025. The included meta analyses had performed a comprehensive search from eight databases (PubMed, Embase, Cochrane library, Web of Science, CNKI, Wanfang, Sinomed, and VIP). Inclusion criteria: (1) randomised controlled trials (RCTs), (2) studies using rTMS intervention, regardless of wave type (Theta, beta, etc), (3) studies which had standardised memory outcomes reported, (4) cases with memory/cognitive impairment after infection with COVID-19 or patients with mild cognitive impairment (MCI). A qualitative inclusion was made for a case report of rTMS in a post covid patient.

The data extracted included sample size, stimulation parameters, memory outcome measures, standardized mean differences, and reported adverse effects. Data synthesis involved no new statistics and was purely descriptive based on the pooled effect sizes.

Risk of bias assessment relied on the original meta analyses. Both applied Cochrane risk of bias assessment tools and reported low to moderate risk across studies. Heterogeneity was assessed using I^2 statistics and was low to moderate for memory outcomes.

Results: Two meta analyses included a combined 23 randomised controlled trials on rTMS in mild cognitive impairment showed significant improvement in memory outcomes (Table 1). Zhang et al. reported a standardized mean difference (SMD) of 0.73 (95% CI: 0.48-0.97), while Hu et al. reported a SMD of 0.61 (95% CI: 0.41-0.82, $I^2 = 22\%$). Subgroup analysis revealed stronger memory improvements with >10 sessions (SMD = 0.84) at 10 Hz stimulation (SMD = 0.86),

with multisite targeting. Follow up data revealed sustained benefits (SMD = 0.93). Adverse effects were minimal and transient. A case report in a post-COVID patient showed improvement in memory after 10 sessions of bilateral theta burst rTMS, supporting possible translatability to post-COVID cognitive impairment.

Conclusion: rTMS significantly improves memory in patients with MCI, particularly with optimized stimulation protocols. Although no randomised studies currently exist in post-COVID patients, one case report has demonstrated similar benefits. Similarities in cognitive profiles, along with a promising case report marks rTMS as a potential treatment option for post-COVID memory impairment. However, further research is needed to directly evaluate its efficacy in this population.

Table 1. Summary of Studies Evaluating rTMS for Memory Impairment

Study (Author, Year)	Sample Size	Population	rTMS Protocol	Memory Outcome	Effect Size (SMD, 95% CI)	Risk
Zhang et al. 2022	12 RC Ts	MCI	10 Hz, >10 sessions	Improved (MoCA, RAVLT)	0.73 (0.48–0.97)	Low to moderate risk of bias
Hu et al. 2023	11 RC Ts	MCI	10 Hz, multi site targeting	Improved (ADAS-Cog)	0.61 (0.41–0.82)	Low to moderate risk of bias
Case report 2024	1 patient	Post-COVID memory loss	Bilateral theta burst	Improved (subjective and neuro psych)	N/A	N/A

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

ORIGINAL RESEARCH

78. **Ekterly (Sebetralstat): A First in Class Oral On Demand Treatment for Hereditary Angioedema**Hitanshi Nareshkumar Panchal,¹ Srijamya.²¹ GMERS Medical College, Gotri, Gujarat, India.² Tbilisi State University, Tbilisi, Georgia

Background: Hereditary angioedema (HAE) is a rare, potentially life-threatening genetic disorder characterized by recurrent episodes of edema affecting the skin, gastrointestinal tract, and airway. With a prevalence of only about 0.0012% globally (range 0.0007–0.01%), its rarity contributes to frequent delays in diagnosis and treatment, increasing risk of severe complications. Until recently, on-demand therapies for HAE required intravenous or subcutaneous administration, limiting accessibility and adherence.

Objective: This study evaluates the clinical significance, therapeutic efficacy, and potential impact of Sebetralstat (Ekterly), the first FDA-approved oral on-demand therapy for HAE.

Methodology: A review of recent clinical trials was conducted, assessing efficacy and safety with key parameters including symptom relief time and bradykinin levels.

Discussion: Sebetralstat is a selective plasma kallikrein inhibitor that blocks bradykinin production, the central mediator of swelling in HAE. By reducing bradykinin, it prevents excessive vascular leakage responsible for symptoms. Clinical trials demonstrated rapid relief, with a median improvement time of 1.6 hours and some patients responding within 10 minutes. In laryngeal attacks, pooled analysis showed symptom relief within a median of 1.07 hours and complete resolution within 24 hours in 64.3% of cases, especially critical outcome to prevent airway obstruction. The oral formulation provides a practical alternative to injectables, enabling timely, unobtrusive treatment and improved quality of life.

Conclusion: Sebetralstat marks a breakthrough in HAE therapy, combining convenience, rapid action, and favorable safety. Its availability is expected to enhance compliance, empower patients, and redefine standards of care.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

ORIGINAL RESEARCH

79. **The Impact Of Nightshifts On Doctors' Cognitive Performance At Kosti Teaching Hospital During War, Sudan, 2024**

Sarah Yousif, Tebyan Suliman, Reem Hatim Gaafar, Rayan Nasir Almogera, Shahd Babekir Ibrahim¹

¹ Faculty of Medicine, Al Neelain University, Khartoum, Sudan.

Background: Nightshifts are an integral part of healthcare delivery but are strongly associated with disrupted circadian rhythms, sleep deprivation, and cognitive decline. These challenges may be exacerbated in conflict-affected regions such as Sudan, where physicians face increased workload and stress. This study aimed to evaluate the impact of nightshifts on doctors' cognitive performance at Kosti Teaching Hospital during the ongoing war in Sudan.

Methods: A hospital-based cross-sectional analytic study was conducted at Kosti Teaching Hospital between September 2024 and January 2025. A total of 54 doctors from medicine, pediatrics, surgery, and obstetrics and gynecology departments were enrolled. Data were collected using a self-administered structured questionnaire incorporating the Fatigue Assessment Scale (FAS), Perceived Stress Scale (PSS), and a cognitive performance assessment tool. Analysis was performed using SPSS v22.

Results: Most participants were males (63%), single (91%), and house officers (63%), with the predominant age group being 25–29 years (69%). The majority reported no regular sleep schedule (70%) and attended fewer than two nightshifts per week (66%), sleeping less than 6 hours during shifts (96%).

Overall, 59.3% of doctors demonstrated cognitive impairment. Moderate stress was reported by 77.8% and mild to moderate fatigue by 37%. No significant association was found between cognitive performance and number of nightshifts per week ($p=0.106$), stress level ($p=0.381$), or fatigue level ($p=0.284$). Most doctors coped with nightshifts by consuming caffeine (72.2%) and taking short breaks (57.4%), while structured sleep schedules were the most common long-term coping strategy (57.4%).

Conclusion: The majority of doctors reported cognitive impairment, moderate stress, and fatigue during nightshifts, though no significant associations were observed between cognitive outcomes and workload, stress, or fatigue levels. Coping strategies such as structured sleep schedules and caffeine consumption were widely adopted. These findings highlight the urgent need for interventions, including optimized shift scheduling and supportive workplace policies, to safeguard physician well-being and patient safety in resource-limited, conflict-affected settings.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

ORIGINAL RESEARCH

80. Psychiatric Comorbidities and Mortality After Heart Failure Hospitalization: Evidence of a Survival Paradox from a Nationwide Cohort

Joe G. Dantin¹, Kyle E. Thurmann², Trisha G.², Mukherjee, Paul T. Kang², Michael D. White³

¹ Rocky Vista University College of Osteopathic Medicine, Parker, USA.

² Creighton University School of Medicine, Phoenix, USA

³ Valleywise Health Medical Center, Phoenix, USA.

Introduction: Psychiatric comorbidities may influence survival outcomes among patients hospitalized for heart failure (HF), yet their individual effects on short- and long-term mortality remain underexplored. Conditions such as depression, bipolar disorder, PTSD, and schizophrenia often coexist with HF and may affect outcomes through mechanisms like poor self-care, reduced treatment adherence, and neurohormonal dysregulation. Psychiatric illness is also associated with increased healthcare utilization, delayed care-seeking, and fragmented follow-up, factors that may compound cardiovascular risk. These comorbidities are frequently underdiagnosed or undertreated in cardiovascular populations, making it critical to understand their prognostic significance. Despite the high prevalence of these comorbidities, limited research has evaluated their direct contribution to mortality following HF hospitalization at a national level. Clarifying how specific psychiatric diagnoses impact mortality may guide risk stratification and inform more tailored post-discharge interventions.

Methods: We conducted a retrospective cohort study using the Nationwide Readmissions Database (NRD), spanning 2016 to 2022. Adult patients (≥ 18 years) hospitalized with a primary diagnosis of HF were included. Psychiatric comorbidities were identified via ICD-10 codes for depression, anxiety, bipolar disorder, schizophrenia/psychotic disorders, PTSD, and substance abuse disorder. Outcomes included 30-day and 1-year mortality, evaluated using multivariable logistic regression models adjusted for demographic, socioeconomic, and hospital-level characteristics. Among 31,886,859 weighted hospitalizations, several psychiatric comorbidities were significantly associated with lower mortality.

Results: Compared to patients without these conditions, those with bipolar disorder had reduced odds of 30-day mortality (OR 0.70, 95% CI: 0.67–0.73, $p < 0.001$) and 1-year mortality (OR 0.72, 95% CI: 0.69–0.74, $p < 0.001$). Similar reductions were observed for schizophrenia/psychotic disorders (30-day OR 0.79; 1-year OR 0.83, both $p < 0.001$), PTSD (30-day OR 0.71; 1-year OR 0.75, both $p < 0.001$), and substance abuse disorder (30-day OR 0.81; 1-year OR 0.86, both $p < 0.001$). Depression was also associated with decreased mortality (30-day OR 0.88; 1-year OR 0.88, both $p < 0.001$). Anxiety showed no significant impact on mortality at either time point.

Conclusion: In this large, nationally representative cohort of hospitalized heart failure patients, most psychiatric comorbidities, including bipolar disorder, schizophrenia/psychotic disorders, PTSD,

depression, and substance use disorder, were independently associated with significantly lower 30-day and 1-year mortality. Only anxiety showed no significant association with mortality. These findings challenge conventional assumptions about the uniformly negative prognostic impact of psychiatric illness in cardiovascular populations. Instead, they suggest a complex interplay between mental health conditions, healthcare engagement, and survival outcomes, possibly reflecting enhanced monitoring, increased resource utilization, or competing risks. This paradoxical survival benefit underscores the importance of diagnosis-specific analysis in psychiatric-cardiovascular research and calls for further investigation into the mechanisms driving these associations. Tailoring post-discharge strategies to reflect the nuanced prognostic profiles of psychiatric subgroups may improve both clinical outcomes and healthcare delivery.

Table 1. Multivariable Associations Between Psychiatric Disorders and 30-Day and 1-Year Mortality

	30-day Mortality	Multivariable	p-value	1-year Mortality	Multivariable	p-value
	% (SE)	OR (95% CI) ²		% (SE)	OR (95% CI) ²	
Depression	7.16 (0.015)	REF	0.001	5.94 (0.009)	REF	0.001
No	6.04 (0.034)	0.88 (0.87, 0.89)		5.01 (0.022)	0.88 (0.86, 0.88)	
Anxiety	6.99 (0.014)	REF	0.77	5.79 (0.009)	REF	0.41
No	6.14 (0.024)	1.01 (0.93, 1.10)		4.95 (0.15)	0.97 (0.91, 1.04)	
Bipolar Disorder	7.08 (0.014)	REF	0.001	5.85 (0.009)	REF	0.001
No	3.61 (0.064)	0.70 (0.67, 0.73)		3.16 (0.043)	0.72 (0.69, 0.74)	
Schizophrenia/psychotic disorders	7.05 (0.014)	REF	0.001	5.83 (0.009)	REF	0.001
No	3.96 (0.077)	0.79 (0.76, 0.82)		3.56 (0.052)	0.83 (0.80, 0.86)	
PTSD	7.02 (0.014)	REF	0.001	5.82 (0.009)	REF	0.001
No	3.50 (0.10)	0.71 (0.67, 0.76)		3.14 (0.079)	0.75 (0.72, 0.79)	
Substance Abuse Disorder	7.61 (0.016)	REF	0.001	6.24 (0.01)	REF	0.001
No	4.69 (0.026)	0.81 (0.80, 0.83)		4.07 (0.016)	0.86 (0.85, 0.86)	

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)



ORIGINAL RESEARCH

81. **Cardiovascular Readmissions After Heart Failure: Substance Use Disorder as a Potential Risk Factor Among Psychiatric Comorbidities**Trisha Mukherjee¹, Kyle E. Thurmann¹, Joseph G. Dantin², Paul T. Kang¹, Michael D White³¹Creighton University School of Medicine, Phoenix, USA²Rocky Vista University College of Osteopathic Medicine, Parker, USA.³Valleywise Health Medical Center, Phoenix, USA.

Background. Psychiatric comorbidities are known to adversely affect cardiovascular (CV) outcomes, but their specific influence on CV-related hospital readmissions remains unclear. While prior research has focused on all-cause 30-day readmissions, few studies have evaluated psychiatric conditions in relation to CV-specific readmissions over both short- and long-term periods. This study aims to assess how individual psychiatric diagnoses impact 30-day and 1-year CV-specific readmission risk in patients initially hospitalized for heart failure (HF).

Methods. We conducted a retrospective cohort analysis using the Nationwide Readmissions Database (NRD) from 2016 to 2022. A total of 31,886,859 weighted hospitalizations were included. Adult patients (≥ 18 years) hospitalized for HF were stratified by psychiatric comorbidity, including depression, anxiety, bipolar disorder, post-traumatic stress disorder (PTSD), schizophrenia/psychotic disorders, and substance use disorder (SUD). The primary outcomes were CV-specific readmissions within 30-days and 1-year, identified using ICD-10 codes. Multivariable Cox regression models adjusted for age, sex, Charlson Comorbidity Index, income quartile, hospital characteristics, and discharge disposition were used to calculate hazard ratios (HRs) with 95% confidence intervals (CIs).

Results. SUD was the only condition associated with a clinically significant increased risk of CV-specific readmission at both 30-days (HR 1.03, 95% CI 1.02-1.03, $p < 0.001$) and 1-year (HR 1.02, 95% CI 1.02-1.03, $p < 0.001$). In contrast, statistically significant but clinically modest reductions in CV-specific readmission at both were observed at both time points for depression (30-day HR 0.85, 95% CI 0.84-0.85, $p < 0.001$; 1-year HR 0.85, 95% CI 0.84-0.85, $p < 0.001$), bipolar disorder (30-day HR 0.82, 95% CI 0.81-0.84, $p < 0.001$; 1-year HR 0.81, 95% CI 0.80-0.82, $p < 0.001$), PTSD (30-day HR 0.84, 95% CI 0.82-0.86, $p < 0.001$; 1-year HR 0.84, 95% CI 0.83-0.86, $p < 0.001$), and schizophrenia/psychotic disorders (30-day HR 0.90, 95% CI 0.89-0.92, $p < 0.001$; 1-year HR 0.90, 95% CI 0.88-0.91, $p < 0.001$). Anxiety was associated with the smallest reduction in CV-specific readmission at 30-days (HR 0.94, 95% CI 0.90-0.98, $p = 0.002$) and 1-year (HR 0.96, 0.93-0.98, $p = 0.001$).

Conclusion. SUD emerged as the only psychiatric comorbidity independently associated with a clinically significant increase in CV-specific readmissions at both 30-days and 1-year following HF hospitalization. In contrast, other psychiatric conditions, including

depression, bipolar disorder, PTSD, schizophrenia/psychotic disorders, and anxiety, were associated with modest reductions in readmission risk. This counterintuitive pattern may reflect increased clinical monitoring and psychosocial support in patients with these established psychiatric diagnoses, which could help prevent CV decompensation. Additionally, these patients may be more frequently rehospitalized for non-CV reasons, leading to an underestimation of CV-specific readmissions in administrative data. Altogether, these findings highlight SUD as a uniquely high-risk diagnosis in the context of post-discharge CV outcomes and reinforce the critical need for structured discharge planning and timely follow-up that incorporates addiction treatment alongside CV care. Targeted interventions during and after HF hospitalization may help reduce preventable readmissions and improve long-term prognoses for this patient population.

Table 1. Risk of CV-Specific 30-Day and 1-Year Readmission by Psychiatric Covariates.

Variables (N = 31,886,859)	Cardiovascular - Specific 30-Day Readmission % (SE)	Multivariable		Cardiovascular - Specific 1-year Readmission	Multivariable	
		HR (95% CI) ¹	p-value		HR (95% CI) ¹	p-value
Depression	6.21 (0.007)	REF	<	12.9 (0.009)	REF	<
No	5.62 (0.016)	0.85 (0.84, 0.85)	0.01	11.6 (0.022)	0.85 (0.84, 0.85)	0.01
Yes						
Anxiety	6.13 (0.006)	REF	0.02	12.7 (0.009)	REF	<
No	5.91 (0.12)	0.94 (0.90, 0.98)		12.3 (0.16)	0.96 (0.93, 0.98)	0.01
Yes						
Bipolar Disorder	6.12 (0.006)	REF	<	12.8 (0.009)	REF	<
No	6.28 (0.044)	0.82 (0.81, 0.84)	0.01	11.8 (0.057)	0.81 (0.80, 0.82)	0.01
Yes						
Schizophrenia/psychotic disorders	6.11 (0.006)	REF	<	12.8 (0.009)	REF	<
No	7.09 (0.053)	0.90 (0.89, 0.92)	0.01	12.9 (0.07)	0.90 (0.88, 0.91)	0.01
Yes						
PTSD	6.12 (0.006)	REF	<	12.8 (0.009)	REF	<
No	5.97 (0.067)	0.84 (0.82, 0.86)	0.01	11.8 (0.091)	0.84 (0.83, 0.86)	0.01
Yes						
Substance Abuse Disorder	5.91 (0.007)	REF	<	12.4 (0.009)	REF	<
No	7.04 (0.015)	1.03 (1.02, 1.03)	0.01	14.1 (0.02)	1.02 (1.02, 1.03)	0.01
Yes						

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE REPORT

82. Tuberculous Aortitis Masquerading as Takayasu Arteritis: A Diagnostic Tightrope in a TB-Endemic Region

Tooba Fatima Iram¹, Yusra Fatima Anam², Haroon Abdullah Shaheed,¹ Rahul Kumar Agarwal,¹ Naazira Begum.²

¹CARE Hospitals: Hyderabad, Telangana, India

²Independent author

Background: Tuberculous aortitis is an exceptionally rare extrapulmonary manifestation of *Mycobacterium tuberculosis*, most often seen in TB-endemic areas. It typically presents with nonspecific symptoms and may closely mimic primary large-vessel vasculitis, particularly Takayasu arteritis. Differentiating between infectious and autoimmune causes of aortitis is critical, as the management pathways diverge significantly namely, anti-tubercular therapy (ATT) versus immunosuppression. This case illustrates the diagnostic complexity and clinical decision-making involved in distinguishing between the two in a high-risk patient.

Case Presentation: A 50-year-old woman with a background of hypertension, type 2 diabetes mellitus, chronic atherosclerotic disease, and bilateral renal artery stenosis presented with a two-day history of vomiting and blurring of vision. She had no history of fever, claudication, stroke, postprandial pain, or chest discomfort.

On examination, she had a striking discrepancy in blood pressure: 160/80 mmHg in the upper limbs and 80/50 mmHg in the lower limbs. Neurological and systemic examinations were otherwise unremarkable. Initial investigations revealed serum sodium of 119 mmol/L, creatinine of 1.5 mg/dL, and CRP of 21.6 mg/L. ANA was positive, while cANCA and pANCA were negative. CT brain showed chronic right parietal lacunar infarct.

A CT aortogram revealed severe narrowing of the descending thoracic and abdominal aorta with >90% stenosis of the coeliac artery, moderate superior mesenteric artery stenosis, and one-third occlusion of the left posterior tibial artery. These findings raised strong suspicion for Takayasu arteritis.

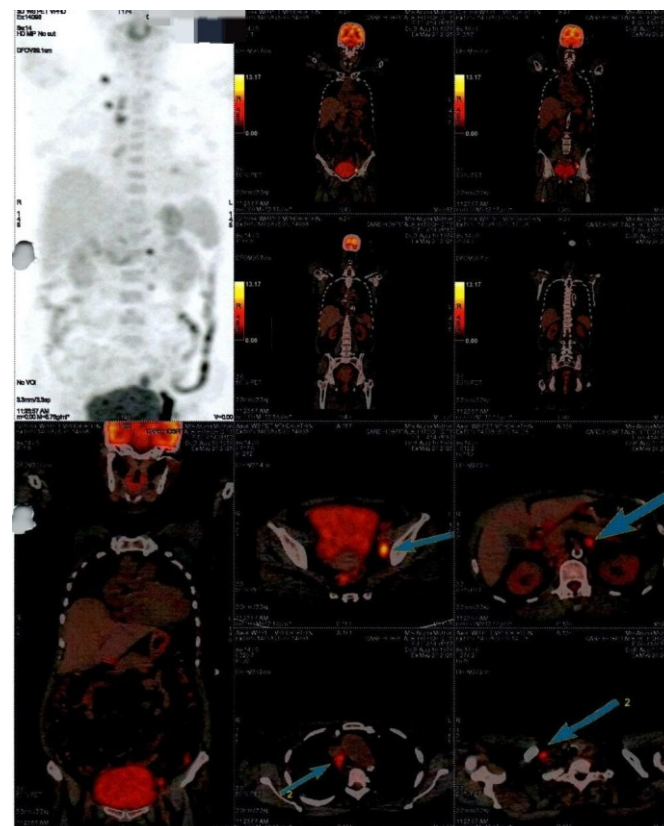
However, PET-CT demonstrated metabolically active supraclavicular lymphadenopathy, and Mantoux testing was strongly positive. ESR and CRP showed a rising trend. While a lymph node biopsy was planned, general surgery deemed it inaccessible for sampling at the time. The patient had no systemic features suggestive of autoimmune vasculitis but did meet multiple criteria for large-vessel involvement with TB-related inflammatory markers and imaging findings. Given the constellation of features and the TB-endemic context, a presumptive diagnosis of tuberculous aortitis was made.

Conclusion: This case highlights the diagnostic challenge of differentiating tuberculous aortitis from Takayasu arteritis, particularly in regions where tuberculosis is endemic. Radiological findings alone may be insufficient, as both conditions can involve extensive aortic and branch vessel narrowing. In such cases, adjunctive investigations—such as Mantoux testing, PET-CT imaging, inflammatory markers, and careful exclusion of systemic autoimmune features—are critical in guiding diagnosis and therapy.

Timely recognition of tuberculous aortitis is vital to prevent inappropriate immunosuppression and its complications. Empirical

initiation of ATT in clinically suggestive cases, even in the absence of histopathological confirmation, may be justified in high-burden settings when biopsy is not feasible. Clinicians must maintain a high index of suspicion and adopt a multidisciplinary approach to navigate such diagnostic tightropes.

Figure 1: PET Scan Demonstrating Metabolically Active lymph Nodes.



Legend: She was initiated on empirical anti-tubercular therapy (ATT) on discharge, with close outpatient follow-up arranged.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)
ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE REPORT**83. Pregnancy outcomes following elective fetal reduction from dichorionic twins to singleton: Analysis of 30 consecutive cases performed at 11-14 weeks.**Brojesh Rishi Mukherjee¹¹ Kalinga Institute of Industrial Technology, India

Background: Requests for reduction from twins to singleton are being faced more frequently in the recent times. This study aims to assess the outcomes of fetal reduction from DCDA twins to singleton where both fetuses looked anatomically normal for gestation.

Materials & Methods: This is a case series carried out in a single fetal medicine unit in Kolkata over a period of 36 months. Internal ethics committee approval was obtained for this retrospective review. Women carrying dichorionic diamniotic twins where there were no obvious medical indications were included in the study. The only reason for performing these procedures was maternal request. All cases were performed trans-abdominally at 11-14 weeks gestation by a single operator with considerable experience. The primary objective of this study was to assess the risk of procedure related pregnancy loss. The secondary objective was to assess the overall pregnancy outcome for these cases.

Results: 31 cases were performed in this study period but one was lost to follow up. Hence 30 cases were analysed retrospectively. We did not have any pregnancy loss before 24 weeks in this series. Three underwent premature delivery before 34 weeks but all other pregnancies could be continued till term and delivered after 37 weeks with good perinatal outcome.

Conclusion: Our study results, when compared with published literature appeared comparable in terms of the risk of miscarriage, gestational age at delivery and birth weight. Fetal reduction remains an effective option in cases to DCDA twins to those who prefer to give birth to one child only.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

CASE REPORT**84. Successful Microsurgical Replantation After Multiple Traumatic Amputations Caused by an Electric Grinder: A Case Report**

Martin Rodriguez Alvarado ¹, Mariana Fraga Duarte ², Sofia Rubiralta Adame ³, Alba Mayra Padilla ⁴, Celina Veronica Kishi Sutto ⁵, Jorge Luis Perez Ruiz ⁵

¹ Instituto Politécnico Nacional, Ciudad de México, México

² Universidad La Salle, Ciudad de México, México

³ Universidad Panamericana, Ciudad de México, México

⁴ Instituto Jalisciense de Cirugía Plástica y Reconstructiva "Dr. José Guerrerosantos", Guadalajara, México

⁵ Instituto Jalisciense de Cirugía Plástica y Reconstructiva "Dr. José Guerrerosantos", Guadalajara, México

Traumatic digital amputations are uncommon but carry significant functional, aesthetic, and occupational consequences, particularly in young adults. Microsurgical replantation has been shown to restore hand function and improve quality of life; however, success depends on factors such as ischemia time, injury mechanism, tissue viability, and surgical technique. Machinery-related injuries are especially challenging due to extensive crush and avulsion damage, often limiting replantation possibilities. Recent evidence suggests that even in the absence of suitable veins for anastomosis, venous congestion techniques can sustain digital viability, with reported survival rates up to 78.5%.

We report the case of a 24-year-old woman who suffered total traumatic amputation of the second (D2) and third (D3) digits, and partial amputation of the fourth (D4) digit of her right hand after an accident with an electric mill. She arrived at the emergency unit 1.5 hours post-injury. D3 was deemed non-replantable and underwent stump remodeling. Successful microvascular replantation of D2 was achieved, including bone fixation with Kirschner wires, terminal-to-terminal arterial anastomosis, nerve repair, and tenorrhaphy. Postoperative management included anticoagulation and antiplatelet therapy. At six weeks, fixation material was removed, and the patient continues rehabilitation with favorable outcomes and no major complications.

This case demonstrates that meticulous microvascular reconstruction of digits, integrating bone, vascular, nerve, and tendon repair, can restore function and aesthetics in complex traumatic amputations. Early intervention, careful patient selection, technical precision, and comprehensive rehabilitative care are critical for success. Multidisciplinary management is essential, providing clinical evidence to guide surgical decision-making in similar high-complexity cases.

Figure 1. Fractured Hand Radiograph



Legend: Left: Anteroposterior (AP) X-ray of the right hand exhibiting traumatic amputation of the second (D2) and third (D3) digits, with partial amputation of the fourth (D4), showing severe, complex skeletal and soft-tissue trauma from an electric grinder. Right: Post-operative AP X-ray after microsurgical replantation. D2 shows stabilization with intramedullary and transverse Kirschner wires. D3 is absent, consistent with stump remodeling. D4 depicts partial preservation and improved alignment. The fixation maintains functional anatomy for pinch and grip via successful skeletal stabilization.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

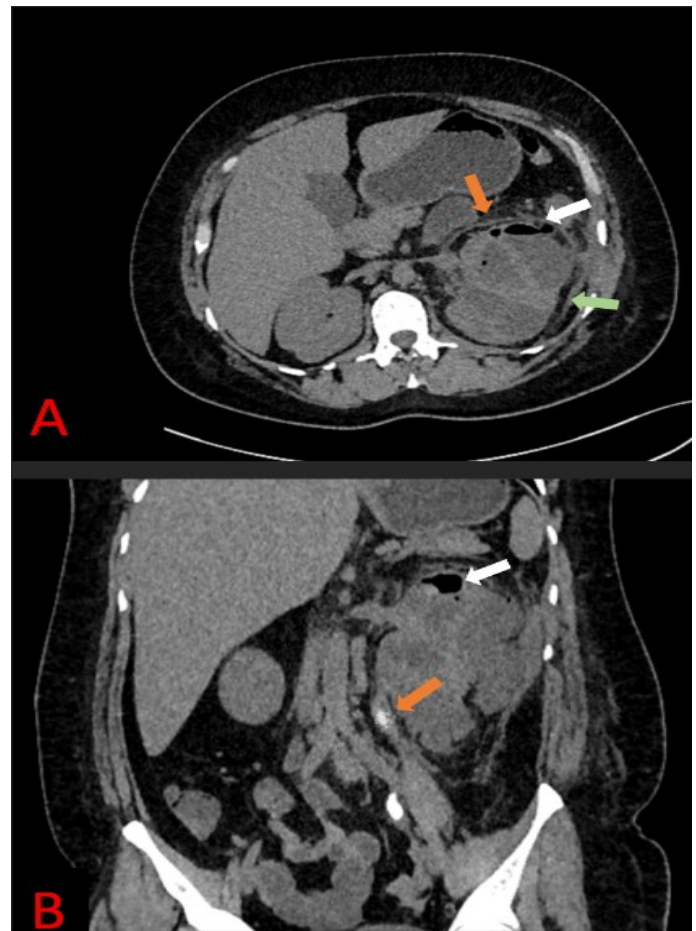
CASE REPORT**85. Challenging the Paradigm: Emphysematous Pyelonephritis in a Culture-Negative, Non-Diabetic Patient**Wilson S. Peñafiel-Pallares,¹ Juan Velez-Posada.¹¹Universidad de las Americas, Ecuador

Background: Emphysematous pyelonephritis (EPN) is a necrotizing infection characterized by gas within the renal parenchyma and perirenal tissues. It is highly fatal, particularly in patients with diabetes mellitus or ureteral obstruction and has predilection for the left kidney. The Huang and Tseng classification is most typically applied to stratify severity. This case is remarkable because of the extremely rare reports of EPN in non-diabetic patients with negative urine cultures, occurring in up to 30% of reported cases.

The Case: A 41-year-old female with history of bilateral nephrolithiasis, presented with severe left flank pain, radiating to the lumbar and inguinal regions, in association with dysuria, oliguria, and vesical tenesmus. Physical examination revealed significant tenderness of the left flank. Laboratory findings indicated profound leukocytosis, and urinalysis showed signs of infection but no urine culture growth. Non-contrast uro-Computed Tomography demonstrated bilateral nephrolithiasis, left-sided hydronephrosis, emphysematous changes in the renal parenchyma, and inflammatory involvement of Gerota's, Lateroconal, and Zuckerkindl's fascia. Based on radiological criteria, the case was classified as Huang and Tseng grade IIIB. The patient was managed with broad-spectrum intravenous antibiotics and supportive measures, with subsequent clinical improvement and no symptoms recurrence at 6 months-follow-up.

Conclusion: Emphysematous pyelonephritis is a life-threatening infection most commonly associated with diabetes, yet it may also occur in non-diabetic patients with obstructive uropathy. Negative urine cultures do not exclude the diagnosis. Radiologic findings play a fundamental role in classification and management decisions. Early diagnosis and prompt treatment are critical for a favorable outcome.

Figure 1. Axial and Coronal Views of UROTAC Simple CT Scan Showing [Specify Pathology/Area].



Legend: (A) Axial non-contrast uro-CT showing air within the left renal parenchyma (white arrow), inflammation of Gerota's fascia (orange arrow), and pararenal tissue involvement (green arrow). (B) Coronal abdominal and pelvic CT showing left ureteral lithiasis (orange arrow), increased volume of the left renal parenchyma, and the presence of gas in the renal dome (white arrow).

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE REPORT**86. Early Recognition of Eosinophilic Granulomatosis with Polyangiitis (Churg-Strauss Syndrome): a Case Report of Successful Diagnosis and Treatment**Viktorija Domrina,¹ Beatričė Linkauskaitė,¹ Liucija Mazaliauskaitė.¹¹Lithuanian University of Health Sciences

Background: EGPA is a rare, multi-system, autoimmune disease characterized by vasculitis along with asthma and elevated eosinophils in the blood and tissues, affecting 1 to 3 in 1 million people annually, primarily middle-aged population [1]. It is well known that a large proportion of EGPA patients have had asthma and/or have had or currently have nasal polyps [2]. EGPA is associated with increased mortality compared to the general population. Due to variable clinical presentations, diagnosis is often delayed, leading to various physical deficits and life-threatening conditions. Therefore, it is important to detect and treat the syndrome in a timely manner.

The Case: We present a case of successful diagnosis and treatment Churg-Strauss syndrome, emphasizing the importance of early recognition and intervention. A 56-year-old man with bronchial asthma and a history of sinus surgery presented with rhinitis, cough, low-grade fever, wrist pain and digital paresthesia. Initial imaging revealed sinusitis and right lung infiltrates and treatment for presumed pneumonia was started. During hospitalisation he developed anaemia, respiratory failure, haemoptysis, persistent inflammation and urinary problems. Further evaluation revealed a haemorrhagic rash, eosinophilic leukocytosis, haematuria, proteinuria and positive p-ANCA antibodies. Renal biopsy confirmed focal necrotizing and crescentic glomerulonephritis with eosinophilic infiltration consistent with EGPA. The patient's clinical condition improved rapidly with the introduction of high-dose methylprednisolone pulse therapy.

Conclusion: This case demonstrates the complexity of diagnosing EGPA, which can be diverse and similar to more common diseases such as asthma, sinusitis and pneumonia. A multidisciplinary approach, including histological confirmation, was necessary to establish an accurate diagnosis. Early recognition and prompt initiation of corticosteroid treatment led to favourable short-term outcomes. Given the risk of relapse and chronic organ damage, long-term follow-up and consideration of biological therapy are warranted to improve disease control and prognosis.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

CASE REPORT**87. Bilateral Fasciocutaneous V-Y Advancement Flaps for Reconstruction of a Stage IV Sacral Pressure Injury in a Burn Patient: A Case Report and Literature Review**

Sebastian Colina¹, Wilson Sebastian Peñafiel-Pallares², Javier Campoverde-Sanchez³, Jonathan Velasco-Bustamante⁴

¹ Universidad San Francisco de Quito, Quito, Ecuador

² Universidad de las Americas, Quito, Ecuador

³ Hospital de Especialidades Eugenio Espejo, Quito, Ecuador

⁴ Pontificia Universidad Catolica del Ecuador, Quito, Ecuador

Background: Pressure injuries (PIs) in the sacral region are a major reconstructive challenge, particularly in critically ill patients or those with a history of extensive burns. Healing capacity is often impaired, and the availability of healthy tissue is limited. Surgical coverage using fasciocutaneous flaps, such as the V-Y advancement design, provides durable reconstruction and effective redistribution of tension. This case illustrates the effectiveness of bilateral V-Y fasciocutaneous flaps in managing a large sacral PI in a burn patient.

The Case A 47-year-old male with a history of extensive burns developed a stage IV sacral pressure injury during a prolonged stay in the intensive care unit. Clinical evaluation confirmed deep tissue involvement. After nutritional optimization, infection control, and wound bed preparation, surgical coverage was planned. Reconstruction was achieved with bilateral V-Y fasciocutaneous advancement flaps, which allowed tension-free closure and adequate vascularized coverage. The postoperative course was uneventful. At twelve-month follow-up, the wound remained fully closed, with no recurrence, dehiscence, or functional compromise. Recent evidence suggests fasciocutaneous flaps may provide superior resistance to pressure compared with muscle flaps, while minimizing donor-site morbidity. Bilateral V-Y advancement flaps allow tension-free closure and remain reliable even in patients with challenging comorbidities, as illustrated in this case.

Conclusion: Bilateral V-Y fasciocutaneous flaps represent a safe, reliable, and effective strategy for reconstructing extensive sacral pressure injuries in patients with complex backgrounds such as burns. Integration of surgical treatment into a multidisciplinary and preventive care plan is critical to optimize outcomes and reduce recurrence risk.

Figure 1. Intraoperative Management of a Sacral Pressure Injury with V-Y Advancement Flaps



Legend: (A) Intraoperative view of a stage IV sacral pressure injury following serial debridement. The defect demonstrates full-thickness tissue loss with exposed bone and extension into the gluteal region. Margins of viable granulation tissue are visible, and preoperative markings delineate the design of bilateral V-Y fasciocutaneous advancement flaps for subsequent reconstruction. (B) Immediate postoperative result after bilateral fasciocutaneous V-Y advancement flaps for coverage of a stage IV sacral pressure injury. The flaps are closed in the midline without tension, with preservation of contour and placement of bilateral suction drains to prevent seroma or hematoma formation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing

CASE REPORT**88. Reversible Hypocalcaemic Dilated Cardiomyopathy causing Decompensated Heart Failure- A Case Report**Shlok Bhardwaj¹, Bhupinder Singh¹¹ All India Institute of Medical Sciences, Bathinda

Background: Hypocalcaemia induced heart failure, commonly seen in children due to Vitamin D deficiency, is a rare clinical syndrome in adults. These patients are refractory to routine treatment, but the timely diagnosis of the underlying etiology and correction of calcium promptly restores myocardial function.

The Case A 55-year-old non-alcoholic and non-smoker female, previously diagnosed as a case of dilated cardiomyopathy, presented with complaints of progressive dyspnoea on exertion from NYHA-II to NYHA-IV over a span of 1 week. At admission the patient was conscious, afebrile; having respiratory distress, peripheral oxygen saturation of 93% at room air, blood pressure of 92/56 mmHg equal in both arms, regular pulse rate of 100 beats per minute, audible left ventricular S₃, mild peripheral edema, and bilateral basal crepitations. She was diagnosed to have decompensated heart failure. Chest X-Ray revealed cardiomegaly. Electrocardiogram showed sinus tachycardia (90 beats/minute), QRS axis of -20°, prolonged QTc of 574 milliseconds. Laboratory analysis at admission revealed minimally deranged liver and renal functions, and highly elevated BNP. Relevant biochemical parameters are shown in the given table. Transthoracic echocardiogram revealed dilated left chambers (left ventricle end-diastolic diameter: 61 mm, left ventricle end-systolic diameter: 52 mm), left ventricle (LV) severe global systolic dysfunction (LVEF=22%) due to diffuse hypokinesia, restrictive type of diastolic dysfunction with elevated filling pressure indexes (E/E' = 19), mild functional mitral regurgitation, mild tricuspid regurgitation, moderate pulmonary hypertension (systolic pulmonary artery pressure of 50 mmHg). Normal coronary angiography ruled out underlying ischemia. Patient was initially started on furosemide as decongestive therapy. Subsequent investigations conducted due to prolonged QTc revealed severe hypocalcaemia (corrected calcium of 4.38 mg/dL), inappropriately normal PTH, and presence of basal ganglia calcification on CT head was highly suggestive of primary hypoparathyroidism. Parenteral treatment with Gluconic Calcium was started: 950 mg of calcium (1 ampoule) at 6 hours, followed by oral treatment- high dose of calcium (1g TDS) and alfacalcidol (0.25µg TDS) along with management of heart failure. The patient had progressive clinical improvement and was discharged in NYHA class II on Day 10. Patient's serum calcium progressively improved during course of stay and was within normal limits at the time of discharge. Treatment at discharge included loop diuretic, ACE inhibitor, Calcium, alfacalcidol. Patient was followed up regularly; and NYHA class, renal functions, serum calcium level, and ECG were assessed. At follow up after 3 months, patients had significant improvement in LV function and normalised LV function after 6 months.

Conclusion: Considering the rarity of hypocalcemia induced dilated cardiomyopathy in adults, this etiology must be suspected in a cardiac patient with ECG changes suggestive of hypocalcaemia (as in

our case). Early calcium supplementation, usually along with vitamin D, reduces and even reverses ventricular hypertrophy and dilatation as well as conduction abnormalities, as it was in our case.

Table1. Biochemical and Cardiac Laboratory Parameters

Biochemical Parameter	Observed Value	Normal Range
Serum Calcium	4.38 mg/dL	8.5-10.5 mg/dL
PTH	19.12 pg/mL	10-55 pg/mL
Serum Magnesium	1.6 mg/dL	1.7-2.2 mg/dL
Vitamin D	36.2 ng/mL	40-60 ng/mL
Serum Phosphate	10.8 mg/dL	3.0-4.5 mg/dL
Serum Sodium	135 mmol/L	135-145 mmol/L
Serum Potassium	3.8 mmol/L	3.5-5.0 mmol/L
CK-MB	22 U/L	<25 U/L
Troponin T	0.03 ng/mL	<0.04 ng/mL
BNP	582 pg/mL	<100 pg/mL
SGOT	120 U/L	5-40 U/L
SGPT	100 U/L	5-40 U/L
Serum Bilirubin	1.1 mg/dL	0.3-1.2 mg/dL
Total Protein	7.1 g/dL	6-8 g/dL
Serum Albumin	3.9 g/dL	3.5-5.0 g/dL

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE REPORT**89. When Antibiotics Leave a Mark: Understanding Minocycline-Related Pigmentation**Roma Desai¹, Jacqueline Leon¹, Alicia Fields¹, Jarrod Plank²¹ University of Kentucky College of Medicine, Kentucky, USA² Morehead State University, USA

Background: Minocycline, a broad-spectrum tetracycline antibiotic, is frequently prescribed for chronic dermatologic or infectious conditions¹. While generally well-tolerated, long-term or high-dose use can lead to a rare side effect: minocycline-induced hyperpigmentation (MIH). MIH is categorized into four types based on clinical presentation and histopathology, with Type I causing blue-black macules affecting sites of inflammation, Type II causing blue-gray pigmentation on areas of normal skin, Type III involving diffuse muddy-brown discoloration in sun-exposed areas, and Type IV affecting scars on the back^{1,2}. With the growing use of minocycline for resistant infections, recognition of this side effect is important.

The Case: A 68-year-old male with a medical history of hypertension, congestive heart failure, type II diabetes, dyslipidemia, colon cancer, and prior aortic valve replacement was admitted to the hospital following a syncopal event. He was found to be febrile (104°F), delirious, and diagnosed with sepsis caused by *Acinetobacter baumannii* with no clear infection source. He was prescribed oral minocycline 100 mg twice daily for long-term suppression for approximately 5 years. Approximately 12 months after initiation, the patient developed bilateral hyperpigmentation on the dorsal surfaces of his feet, which gradually spread up to his bilateral lower extremities, forearms, cheeks, and sclera. The pigmentation persists and continues to expand at a slow rate. The clinical features suggest Type III MIH.

Conclusion: The case illustrates a severe and unusually widespread manifestation of Type III MIH resulting from long-term minocycline use. While some pigmentation cases resolve after drug discontinuation, Type III often persists indefinitely^{1,2} and with increasing total cumulative dose³. This disfiguring adverse effect highlights the importance of ongoing skin assessments in patients on long-term, high-dose minocycline regimens. Early recognition and timely intervention may help prevent irreversible cosmetic changes and improve long-term patient outcomes.

Figure 1. Dark Pigmentation on the Patient's Sclera, Cheek, Upper Extremity, and Lower Extremities.



This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE STUDY**90. Beyond Genetics: Clinico-Pathological Recognition of Ullrich Muscular Dystrophy in a Resource-Limited Setting**PARVATHI SUDHA HARI,¹ Ranjit Sanu Watson,¹ Sudha P.¹¹Government Medical College Thiruvananthapuram, India

Background: Ullrich congenital muscular dystrophy (UCMD) is a rare collagen VI-related myopathy caused by mutations in COL6A1, COL6A2, or COL6A3 genes. Although traditionally considered an autosomal recessive disorder, recent reports have identified autosomal dominant variants that cause the UCMD phenotype. Clinically, it is characterized by early-onset muscle weakness, proximal joint contractures, and distal joint hyperlaxity. This condition frequently progresses to restrictive respiratory involvement, while typically sparing cognitive, sensory, and autonomic functions. Given this predictable trajectory, early integration of palliative care is increasingly emphasised to optimize quality of life and reduce crisis-driven interventions. UCMD is extremely rare, with an estimated prevalence of fewer than 1 in 1,000,000 births worldwide, though the exact frequency remains unknown. A definitive diagnosis requires genetic confirmation and immunohistochemistry, but such resources are often limited in low- and middle-income countries.

Case summary: A 15-year-old male, born of a third-degree consanguineous marriage, presented to the internal medicine department with recurrent lower respiratory tract infections and respiratory distress.

He was first evaluated at age 4 for progressive motor regression, difficulty ambulating, and multiple joint contractures. Over the next decade, he had progressive motor decline and restrictive pulmonary disease, while cognitive, sensory, autonomic, and cardiac functions remained preserved.

Physical examination revealed proximal muscle weakness, contractures of elbows and ankles, lumbar lordosis, café-au-lait spots, and a waddling gait. Muscle biopsy demonstrated features consistent with a dystrophic process and mild non-specific myopathic changes. A clinical diagnosis of UCMD was established based on characteristic clinical findings and histopathological correlation due to the unavailability of genetic testing and collagen VI immunohistochemistry. The internal medicine team integrated palliative care principles in his management through holistic assessment, symptom management, caregiver support, advanced care planning, and multidisciplinary coordination.

This case illustrates UCMD's diagnostic challenges, natural history marked by progressive musculoskeletal and respiratory decline, and the imperative for early integration of palliative care principles in management.

Conclusion: UCMD is a rare genetic disorder that is often underdiagnosed due to limited awareness and diagnostic challenges, particularly in resource-limited settings. Early diagnosis is essential to initiate supportive care, which can significantly improve quality of life.

This case highlights the diagnostic value of comprehensive clinical evaluation and muscle biopsy in identifying UCMD. Increased awareness and expanded diagnostic testing programs are key to uncovering additional cases. Wider access to genetic testing is critical for diagnostic confirmation. Continued research into the molecular and genetic basis of UCMD will help to improve diagnosis and develop novel therapies. Owing to its rare occurrence, comprehensive epidemiological studies are needed to get more knowledge about its global incidence and natural history. Early palliative care integration is recommended to optimize patient and family well-being.

Figure 1. Clinical Features of Ullrich Congenital Muscular Dystrophy



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY

91. Circulating Tumor DNA as a Tool of Surveillance and Early Indicator of Relapse in Sarcoma Patients

Esha Sankhala,¹ Earl Brien,² Allan Silberman,² Jaya Gill,³ Leo Mascarenhas.²

¹ University of Queensland, Brisbane, Australia

² Centro Médico Cedars-Sinai, Australia

³ Centro de Investigación y Oncología Precision NextGen, Australia

Background: The use of circulating tumor DNA (ctDNA) has been increasingly explored to monitor treatment response and recurrence surveillance in sarcoma patients. Given the minimally invasive method of measurement via blood samples, and its accuracy and early prediction compared to traditional imaging studies, this method holds promise for implementation as part of patient monitoring following primary treatment. We report our experience in a retrospective series of sarcoma patients where ctDNA was measured in the context of clinical care.

Methods: Retrospective review of five sarcoma patients who were monitored with a tumor-informed ctDNA assay and conventional imaging studies after completing primary treatment was completed.

Results: Patient A: A 36-year-old female was diagnosed with left breast angiosarcoma with liver metastasis. Patient was on pazopanib after initial successful treatment with surgery and chemotherapy. Patient was followed with ctDNA, and 37 days later, ctDNA measurements yielded a positive result (1.25 MTM/mL). Abdomen MRI two months later revealed liver metastasis.

Patient B: A 43-year-old female was diagnosed with metastatic undifferentiated pleomorphic sarcoma. Patient was disease-free for one year after lung metastasectomy but then became positive on ctDNA surveillance (1.31 MTM/mL plasma). Patient had CT imaging two weeks later which showed no disease recurrence. Positive ctDNA levels with negative CT scans led to an additional PET study, confirming recurrence and enabling earlier redirection.

Patient C: A 49-year-old female in remission after treatment for left breast angiosarcoma was followed with ctDNA assays, which yielded a positive result (1.69 MTM/mL). Imaging studies were normal. Subsequent ctDNA showed further ctDNA increase (8.9 MTM/mL). CtDNA increase and negative CT scans led us to order a PET scan, revealing new lesions in the sternum, right sacrum/ilium, and left femur, resulting in early detection of metastatic disease.

Patient D: A 34-year-old male was diagnosed with dedifferentiated chondrosarcoma of the right fibula. The patient completed treatment with surgery and chemotherapy, and ctDNA measurements were negative. Subsequently, a right knee MRI revealed a lesion in the resection bed; core biopsy revealed dedifferentiated chondrosarcoma. Subsequently, ctDNA assay was performed and found to be positive, and radiation was implemented. Follow-up

ctDNA subsequently became negative, confirming treatment response.

Patient E: An 81-year-old male was diagnosed with pleomorphic sarcoma of the chest wall and treated with chemotherapy and resection. Patient developed a recurrence five years later and underwent repeat resection. Repeat recurrence one year later coincided with a positive ctDNA result. Patient received systemic chemotherapy with which ctDNA became negative, confirming treatment response.

Conclusion: CtDNA testing demonstrates promising use compared to traditional imaging studies, appearing to indicate early evidence of disease recurrence/progression. In three of five patients, positive ctDNA results revealed signs of recurrence before imaging studies. Three patient's ctDNA levels declined with treatment, correlating ctDNA as a precise indicator of treatment response. Early recurrence detection made possible through ctDNA assay may ultimately improve patient outcomes.

Figure 1. CtDNA Assay Results for Each Patient



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY**92. From Thirst to Hormonal Collapse: A Case of Pituitary Stalk Enlargement Presenting with Central Diabetes Insipidus and Panhypopituitarism**Tyler Ohler¹, Jacqueline Leon¹, Kusuma Ravulapali, Rakesh Inturi¹ University of Kentucky College of Medicine, USA

Background: Pathologies involving the pituitary stalk (PS) are typically identified by the presence of central diabetes insipidus. The prevalence of central diabetes insipidus (CDI) is less than 1 per 25,000 population. Up to 25% of individuals affected by CDI have cranial neoplasms or have undergone post-pituitary surgery, highlighting its association with these conditions. However, CDI rarely manifests because of pituitary stalk enlargement. We share the case of a 51-year-old female patient with pituitary stalk enlargement presenting as CDI with panhypopituitarism.

The Case: A 51-year-old female with a history of cervical cancer with lung metastasis, chronic myeloid leukemia (CML) and type 2 diabetes mellitus presented with septic shock from *Clostridium difficile* colitis. During hospitalization, she developed symptoms of polyuria, polydipsia. On examination her urine appeared clear in color and her output was 4.2 L/day. Laboratory tests showed elevated serum osmolality (325 mosm/kg) and low urine osmolality (82 mosm/kg), with high serum sodium (156 mEq/L) and urine specific gravity at 1.003. MRI findings

revealed pituitary stalk enlargement (5 mm) with diffuse enhancement of the pituitary gland and lack of T1 hyperintensity in the posterior pituitary, suggesting a pituitary pathology. Hypernatremia was managed with intravenous Dextrose 5% in water fluid. Treatment with subcutaneous desmopressin (2 mcg), resulted in significant improvement in urine output (1.2 L/day) serum osmolality (287 mosm/kg), urine osmolality (420 mosm/kg) and urine osmolality (1.013). This confirmed the diagnosis of Secondary CDI. Concomitantly, the finding of panhypopituitarism was made, necessitating hormone replacement therapy to address deficiencies in TSH, LH, FSH, and ACTH. However, the decision to transfer the patient to hospice care was made considering her overall prognosis and quality of life given her advanced malignancies and poor hospital course.

Conclusion: In this case, clinical, hormonal, and radiologic features of pituitary stalk enlargement presenting as CDI with panhypopituitarism are reported. It is a rare condition with vast possible underlying pathologies. However, diagnosing the cause of an enlarged pituitary stalk can be challenging, particularly given the difficulty, risk, and limited utility associated with obtaining a stalk biopsy. In this patient, the history of multiple malignancies raises the possibility of metastatic involvement of the pituitary. With the existing lack of literature and evidence-based guidelines on both the management and follow-up of this uncommon condition, both repeated imaging and hormonal evaluation are often necessary. In many cases, the underlying pathology will remain unknown.

Table 1. Pre and Post Treatment Values.

Laboratory Value	Pre-Treatment	Post-Treatment	Reference Values
Serum Osmolality	325	287	286-309
	mosm/kg	mosm/kg	mosm/kg
Urine Osmolality	82	420	300-1000
	mosm/kg	mosm/kg	mosm/kg
Urine Specific Gravity	1.003	1.014	1.003-1.035
Urine Output	4.2 L/day	1.8 L/day	800 ml- 2 L/day

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

CASE STUDY**93. Kratom Khaos: Tracing the Medical and Societal Toll of Kratom Use in Kentucky**Jacqueline Leon¹, Tyler Ohler¹, Joseph Beckman¹, Mallory Vaughn¹¹ University of Kentucky College of Medicine, USA

Background: Kratom, derived from a tree species native to Southeast Asia and used in traditional medicine, is gaining popularity within the United States. While at low doses it is intended for stimulant use, higher doses of kratom can achieve analgesic effects similar to opiates. Its use and misuse continues to be an area of interest given its unregulated status and propensity for addiction and abuse. Here we present four cases of kratom abuse observed in the inpatient and outpatient settings in southcentral Kentucky.

The Case: First, 20-year-old female with medical history of anxiety and major depressive disorder presented to the emergency department due to symptoms of restlessness, body aches, chills, nausea, palpitations and loose stools. Patient revealed she has been taking 7-8 kratom tablets daily and had attempted immediate cessation but relapsed due to her symptoms. In clinic follow up, she was started on Atarax and methyl salicylate patches for symptom control and is currently in process of tapering off Kratom. Next, 49-year-old male with history of hypertension, chronic kidney disease, hyperlipidemia, and chronic pain presented to clinic with recurrent hypertensive episodes. He disclosed chronic use of kratom following MVC 5 years prior, currently taking 10 g every 4-5 hours. With a desire to cut back, the patient and his physician through shared-decision making created a tapering plan. With a slow taper, he has not reported any withdrawal symptoms. As his kratom use trends down, he will be referred to a pain management specialist for chronic pain. Additionally, 18-year-old male with no significant medical history was brought to the ED being found unresponsive and foaming at the mouth. He was tachypneic, tachycardic, and hypotensive with a mildly elevated troponin. After receiving Narcan and IV fluids, the patient became responsive. Patient disclosed he was taking two 50 mg packages of kratom alongside marijuana and alcohol for recreation. After returning to baseline, the patient was discharged with close outpatient follow up. Lastly, 38-year-old female with medical history of anxiety/depression, seizures, and thyroidectomy complicated by vocal cord dysfunction presented to the ED after being found minimally responsive by family. Family explained the patient took up to 60 kratom tablets daily and she was found to have urine mitragynine level > 2500. Patient initially displayed nonsensical speech, paranoia, and hallucinations, but progressed to hypersomnolence with subsequent seizure and catatonia necessitating ICU admission. Ultimately transferred to tertiary center for benzodiazepine challenge and possible ECT.

Conclusion: Presently, the United States does not regulate the manufacturing or distribution of kratom. In fact, very little is known about the long-term effects or safety profile. Due to the demonstrated potential for abuse and harm, six states have made the drug illegal. From our patient interactions, the common theme is one

of surreptitious addiction, monetary strain, and little understanding of the risks inherent to what was marketed as a natural supplement. Further research is warranted appropriately counsel our patients to the potential dangers recreational kratom use poses and improve the understanding of the medical and socioeconomic impact of its wide availability.

Table 1. Kratom Cases

Age/Sex	Kratom Use	Presentation
20F	7–8 tablets daily; abrupt cessation attempted	Withdrawal symptoms: restlessness, body aches, chills, nausea, palpitations, loose stools
49M	~10 g every 4–5 hours for 5 years	Recurrent hypertensive episodes
18M	Recreational: 2 × 50 mg packets + marijuana + alcohol	Found unresponsive, foaming at mouth; tachypnea, tachycardia, hypotension; elevated troponin
38F	Up to 60 tablets daily; urine mitragynine >2500	Nonsensical speech, paranoia, hallucinations → hypersomnolence, seizure, catatonia → intensive care unit

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

CASE STUDY

94. Subacute Sclerosing Panencephalitis Presenting as a Stroke Mimic: A Case Report

Avinash Alashetty,¹ Jali Nandita Vivekanand.²

¹MD, DM Neurology, Assistant Professor, Department of Neurology. Mahadevappa Rampure Medical College, Kalaburagi (Gulbarga), Karnataka, India- 585105

²MBBS, Intern. MGM Institute of Health Science / MGM Medical College and Hospital, Chhatrapati Sambhajnagar (Aurangabad), Maharashtra, India- 431001

Background: Subacute sclerosing panencephalitis (SSPE) is a rare, progressive neurodegenerative disorder caused by persistent measles virus infection in the central nervous system. In SSPE, mutant forms of measles virus persist within neurons and glial cells, evading immune clearance. This results in chronic inflammation and progressive neuronal degeneration. The condition typically presents 6–8 years after the initial measles infection with cognitive decline, behavioral changes, and myoclonus, and later progresses to motor decline, seizures, and a vegetative state.

The estimated incidence of SSPE is 4–11 cases per 100,000 measles infections, though higher rates have been reported in lower- and middle-income regions, particularly when measles occurs at a young age. Although the global incidence has decreased with vaccination, SSPE continues to occur in areas with suboptimal measles immunization.

We present a case of SSPE in an unvaccinated young adult, initially suspected to have ischemic stroke.

The Case: A 22-year-old male, unvaccinated against measles, presented with acute neurological deficits, characterized by sudden-onset Right-sided Hemiplegia. Initial MRI showed acute cortical infarcts in the left fronto-parietal region. He received stroke-directed therapy, but there was no neurological improvement.

Over the following days, the patient developed progressive behavioral disturbances, irritability, and memory impairment, followed by myoclonic jerks. A repeat MRI one month later revealed diffuse T2/FLAIR hyperintensities involving the bilateral posterior parietal lobes, left frontal and temporal lobes, and left centrum semiovale, extending beyond the initial infarct-like lesions. These findings were more suggestive of an evolving encephalitic process rather than a vascular event.

Electroencephalography (EEG) demonstrated periodic epileptiform discharges (Figure 1). Cerebrospinal fluid (CSF) analysis showed markedly elevated measles-specific IgG antibodies (29.51 NTU; positive >11.0) with negative IgM, consistent with measles-related encephalitis. The diagnosis of SSPE was established in accordance with Dyken's criteria, fulfilling two major (clinical progression and elevated CSF anti-measles antibody titres) and one minor (EEG showing periodic epileptiform discharges) criterion.

The patient was given supportive treatment along with Isoprinosine, but despite these efforts, his condition continued to deteriorate, and he eventually succumbed.

Conclusion: This case highlights the rare presentation of SSPE with acute neurological deficits initially suspected as stroke in a young, unvaccinated male. The progression from an apparent vascular event to features of encephalitis shows the diagnostic complexity of SSPE and the need for clinicians to maintain a broad differential diagnosis in young patients with evolving neurological symptoms. Despite supportive measures and trial therapies, the prognosis remains poor, and strengthening measles vaccination coverage remains the only effective strategy to prevent this devastating disease.

Figure 1. EEG showing periodic epileptiform changes suggestive of SSPE



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY

95. **From Anatomy to Intervention: Coil Embolization of a Post-Cholecystectomy Hepatic Artery Pseudo aneurysm: A Case Report and Anatomical Insights for Medical Student**

Shahan Ahmed ¹, Faizan Ahmed ², Ehsan Masud Kiani ³, Mahnoor Ahmed ⁴, Anis Ahmed ⁴, Syeda Qumreen Ahmad⁴, Fatima Nazir ⁴, Kamil Ahmad Kamil

¹ Rawal Institute of Health Sciences, Islamabad

² Punjab Medical College, Faisalabad

³ Riphah International University, Islamabad

⁴ Rawalpindi Medical University, Rawalpindi

⁵ Internal Medicine Department, Mirwais Regional Hospital, Kandahar, Afghanistan

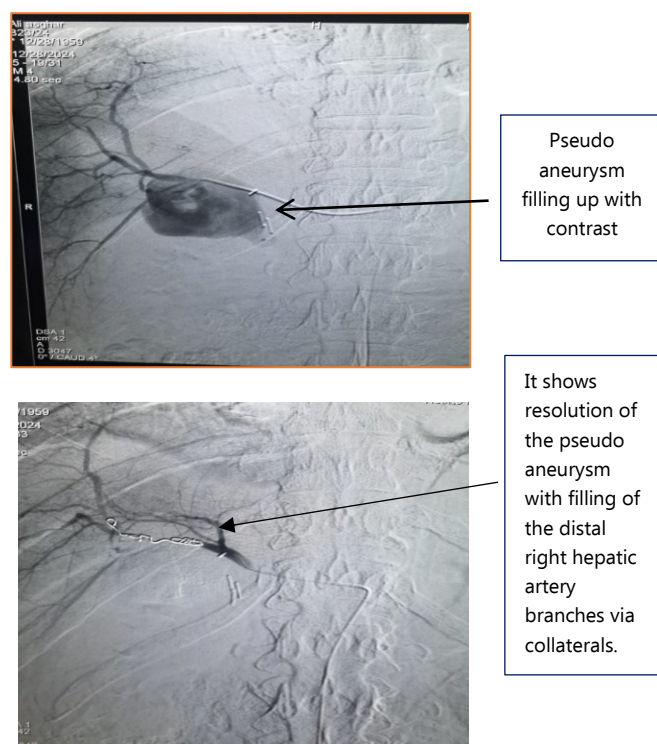
Background: Post-cholecystectomy vascular complications are rare, but serious. The surgical anatomy of the hepatic arteries is notoriously variable and increases the potential risk of injury during hepatobiliary surgery. Normally the hepatic artery proper bifurcates into right and left hepatic arteries. But, in one third of cases the aberrant right hepatic artery (aRHA) may originate from the superior mesenteric, gastroduodenal, right gastric artery or the coeliac trunk. Trauma from surgical clips or electrocautery can damage the aRHA during dissection at the Calot's triangle, with subsequent formation of pseudoaneurysm. This presents late after surgery, mostly as GI bleed, right upper quadrant pain and jaundice—the Quinke's triad. This case report presents pseudoaneurysm formation after injury to aRHA during cholecystectomy which was subsequently managed with coil embolization.

The Case: A 65-years-old gentleman presented with right hypochondrial pain of 5-months duration which was confirmed to be due to gallstones on ultrasonography. He was admitted for cholecystectomy. Intraoperatively, during laparoscopiccholecystectomy Calot's triangle was identified and cystic artery and duct were clipped under vision and cut. While removing the gallbladder massive bleeding was observed for which the procedure had to be converted to open cholecystectomy. Upon inspection an aberrant right hepatic artery was found which was ligated, while 02 pints of blood were transfused. After hemostatic control, bile leak was observed, for which T-tube was placed in the common bile duct. Postoperatively, there was a gradual decrease of his t-tube output. On the 10th post-operative day, patient became apprehensive and there was massive bleeding from T-tube site and in the sub hepatic drain. He developed shock, for which he was resuscitated. Over next week bleeding progressively decreased. Meanwhile, ultrasound showed no intra-abdominal collection but a hypo-echoic area at the porta hepatis. CT angiogram showed a pseudo-aneurysm of RHA and it was aberrantly arising directly from the celiac trunk. The case was discussed in multi-disciplinary meeting, and it was decided that patient needed coil embolization of the pseudo-aneurysm. Procedure was performed by interventional radiologist through right femoral access with 4 Fr C2 catheter. Wire was advanced into the distal right hepatic artery and embolization done with a long 6 mm coils. Coiling was done distal and proximal to the neck of the pseudo-aneurysm. No complications were observed. Post embolization patient remained stable with no bleeding episode. Hemoglobin and liver functions showed improving trend after the intervention. T-tube was removed after an unremarkable cholangiogram. Patient was discharged and follow-up after 2 and 4

weeks showed clinical improvement and no further episode of bleeding. Post-embolization angiogram at 2-week follow-up showed no filling of the pseudo-aneurysm with filling of the distal right hepatic artery branches via collaterals.

Conclusion: This case underscores the importance of knowledge of hepatobiliary vascular anatomy in clinical practice, which enables a surgeon to anticipate challenges and tailor operative strategies accordingly. When an unexplained hemorrhage occurs in the post-cholecystectomy period, CT angiography should be used promptly to detect the cause including pseudo-aneurysm of aRHA and endovascular coil embolization is an effective and minimally invasive intervention with good results.

Figure 1. CT Angiogram; Pre and Post-embolization



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY

96. **Genetically Confirmed Schwartz–Jampel Syndrome: An Ultra-Rare Case of Congenital Myotonia with Osteochondrodysplasia from India**

Jali Nandita Vivekanand,¹ Suvarna Magar,² Tanya Trikha,³ Varsha Vaidya,⁴ Viranchi Vaidya.⁵

¹ MBBS, Intern. MGM Institute of Health Science / MGM Medical College and Hospital, Chhatrapati Sambhajanagar (Aurangabad), Maharashtra, India- 431001

² DNB Pediatrics, Associate Professor, Department of Pediatrics. MGM Institute of Health Science / MGM Medical College and Hospital, Chhatrapati Sambhajanagar (Aurangabad), Maharashtra, India- 431001

³ MBBS, Intern. MGM Institute of Health Science / MGM Medical College and Hospital, Chhatrapati Sambhajanagar (Aurangabad), Maharashtra, India- 431001

⁴ MD, Consultant Pediatric Neurologist. Kpond Multispecialty Hospital, Chhatrapati Sambhajanagar (Aurangabad), Maharashtra, India- 431001

⁵ MS, Professor and Head, Department of Orthopaedics. RK Damani Medical College/ Shriramchandra Institute of Medical Sciences, Chhatrapati Sambhajanagar (Aurangabad), Maharashtra, India- 431001

Background: Schwartz–Jampel syndrome is a rare autosomal recessive disorder caused by mutations in the HSPG2 gene, leading to perlecan deficiency. Perlecan is a heparan sulfate proteoglycan critical for cartilage integrity, basement membrane stability, and neuromuscular transmission. The disorder manifests with skeletal dysplasia and persistent myotonia, while cognition and lifespan are usually preserved. Only about 150 cases have been reported worldwide. We report a four year old child with severe osteochondrodysplasia and generalized myotonia, highlighting the therapeutic benefit of botulinum toxin A in managing both blepharospasm and perioral myotonia.

The Case: A male neonate, born full term to consanguineous parents, was referred on day one of life with suspected skeletal dysplasia. Birth weight was 3.0 kg (–0 to +1 SD), with macrocephaly (>+2 SD) and short length (<–3 SD). Dysmorphic features included a narrow thorax, bent femora and tibiae, retrognathia, long philtrum, and ichthyosis. Infantogram revealed rhizomesomelia with irregular metaphyses of long bones.

At four years, he presented with gross motor delay due to sustained skeletal muscle contractions, failure to thrive, and gait difficulty. Anthropometry remained <–3 SD for height, weight, and head circumference. Examination showed generalized myotonia of facial and skeletal muscles, pursed lips, micrognathia, thoracic kyphosis, hip abduction deformities, and hypertrophied muscles. Neurological assessment revealed hypertonia with areflexia, while speech and cognition were preserved. The differential diagnosis includes muscular dystrophies, skeletal dysplasias, myotonic disorders, congenital myopathies, and cramp–stiffness syndromes such as stiff person syndrome and Isaac's syndrome. However, the coexistence of osteochondrodysplasia with persistent myotonia, supported by whole exome sequencing which revealed a homozygous likely pathogenic variant in the HSPG2 gene (c.5014+2T>C), confirmed the diagnosis. Parental carrier testing showed that both parents were heterozygous carriers of the mutation.

Management included carbamazepine and regular physiotherapy, which provided partial benefit. To address disabling blepharospasm and perioral myotonia that impaired feeding, botulinum toxin A injections were administered to the orbicularis oculi and orbicularis oris. This improved both vision and feeding ability, demonstrating an effective extension of botulinum toxin use in this condition. Parents were counseled regarding malignant hyperthermia risk with anesthesia and advised genetic counseling for future pregnancies.

Conclusion: Schwartz–Jampel syndrome should be suspected when skeletal dysplasia coexists with generalized myotonia, particularly in children of consanguineous unions. Supportive management includes physiotherapy and anticonvulsants, and botulinum toxin A, though primarily used for blepharospasm, can also enhance feeding through perioral muscle relaxation. Prognosis is generally favorable, as symptoms stabilize after adolescence and cognition remains intact. However, morbidity arises from progressive contractures and skeletal dysplasia, speech and feeding difficulties from facial and oropharyngeal myotonia, restrictive lung disease due to a narrow thorax, and the psychosocial burden of visible deformities with reduced mobility. Early recognition, multidisciplinary care, and family counseling, including genetic counseling for future pregnancies, are essential to optimize outcomes in this rare disorder.

Figure 1. Clinical Photographs.



Figure 1.A



Figure 1.B



Figure 1.C



Figure 1.D

Legend: Clinical Photographs of the patient. (A, B) At presentation, showing myotonic facies with pursed lips and marked muscle wasting. (C, D) Four months following treatment, showing improved facies and nutritional status.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt | Open Library Publishing

CASE STUDY

97. **Critical Role of Multiplex PCR in Diagnosing Legionella-SARS-CoV-2 Co-infection in a Severely Immunosuppressed Pregnant Patient: A Case Report**Anda Lup¹,¹ University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Romania

Background: The pregnancy period is characterized by significant immunological shifts, creating a window of vulnerability to severe infections. This susceptibility is profoundly amplified in patients with iatrogenic immunosuppression, such as those receiving biologic therapy for inflammatory bowel disease. Sepsis in these patients presents important diagnostic and therapeutic challenges, as both common pathogens and atypical co-infections must be considered. Co-infection with *Legionella pneumophila*, a potent intracellular bacterium, and SARS-CoV-2, a virus known for inducing immune dysregulation, is exceptionally rare and can precipitate a life-threatening hyperinflammatory state.

The Case: We present a case of severe septic shock and acute respiratory failure resulting from this unusual dual infection in a uniquely compromised host. A 31-year-old female, 35 weeks pregnant, presented in ER with fever, dyspnea and altered general state, rapidly progressing to septic shock despite the broad spectrum antibiotic therapy initiated at admission. Her medical history was significant for ulcerative colitis treated with biologic therapy (Adalimumab) for the past two years. The investigations revealed septic shock, respiratory failure due to severe pneumonia. The obstetrical risk assessment conducted to emergency C section delivery due to high risk of complications and even death for both mother and child. A healthy premature baby was admitted to neonatal unit and the next day, the mother was transferred to infectious diseases intensive care unit.

On admission to the intensive care unit, she was tachypneic (24 breaths/min) with an oxygen saturation of 88% on room air, desaturating on minimal exertion. Laboratory investigations revealed a systemic inflammatory response, with a procalcitonin of 33.9 ng/mL (ref: <0.5), C-reactive protein 21.15 mg/dL (ref: <0.5) and marked neutrophilic leukocytosis. Arterial blood gas analysis confirmed severe acute hypoxemic respiratory failure. A chest radiograph showed a left upper lobe consolidation. While blood cultures remained negative, the urinary antigen test for *Legionella* was positive. The definitive diagnosis was established via a multiplex PCR respiratory panel, which simultaneously detected *Legionella pneumophila* and SARS-CoV-2. The patient was managed with a multi-modal strategy including targeted antimicrobial therapy (Levofloxacin), antiviral treatment (Remdesivir) and immunomodulation with Dexamethasone, alongside supportive care. This approach led to a rapid clinical and biochemical recovery. Inflammatory markers normalized, oxygen requirements decreased significantly, and she was discharged in an improved condition after an 8-day hospitalization. At the 3 weeks follow up evaluation, both mother and child were in healthy condition.

Conclusion: This case highlights a rare and severe presentation of sepsis caused by a co-infection with *Legionella pneumophila* and SARS-CoV-2 virus. The patient's profound vulnerability stemmed from the convergence of the pregnancy condition and immunosuppressive therapy for ulcerative colitis, creating an unfavorable risk alignment for fulminant disease. The key learning points include the critical importance of maintaining a broad differential for atypical and multiple pathogens in immunocompromised hosts and the pivotal role of multiplex molecular diagnostics in achieving rapid and accurate diagnosis. This case demonstrates that despite extreme initial severity, a tailored therapeutic strategy combining targeted antimicrobial, antiviral, and judicious immunomodulatory agents can lead to a successful outcome.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE STUDY**98. Pituitary Carcinoma with Secondary Intracranial Involvement: A Case Report**

Mashoor Al Ahammed¹, Haifa Haris¹, Ryan Brownlee¹,
Raniya Ahmed¹, Aditya Birla¹, Gerald Wallace¹

¹ Medical College of Georgia, Augusta, Georgia

Background: Pituitary carcinoma is an exceptionally rare and aggressive malignancy, accounting for less than 0.5% of all pituitary tumors. Diagnosis requires evidence of cerebrospinal or systemic metastases, as histological features alone cannot reliably distinguish carcinoma from aggressive adenomas. Malignant prolactinomas are particularly uncommon and associated with poor prognosis, with most patients surviving less than one year after diagnosis.

The Case: We present a 28-year-old male with metastatic lactotroph pituitary carcinoma. His initial pituitary mass was resected in 2002 after presenting with neurological symptoms. He subsequently developed multiple recurrences requiring additional surgeries and Gamma Knife radiosurgery. In 2022, a posterior fossa lesion resection confirmed metastatic pituitary carcinoma, lactotroph subtype, with immunopositivity for PIT-1 and prolactin. By 2024, imaging revealed stable lesions in the sella turcica, frontal horn, and cerebellum without new metastases. The patient developed hypopituitarism and epileptic seizures requiring a vagus nerve stimulator. He is currently on cycle 5 of Temozolomide chemotherapy with dose adjustment for thrombocytopenia. Despite the typical poor prognosis of pituitary carcinoma, this patient remains clinically stable over 12 years since the appearance of intracranial spread and over 20 years since the initial diagnosis.

Conclusion: This case highlights the unpredictable clinical course of malignant prolactinomas and the potential for long-term survival with consistent multimodal therapy. The patient's unusually prolonged survival suggests that aggressive surveillance combined with repeated surgical interventions, radiotherapy, and Temozolomide chemotherapy may improve outcomes in select cases. Further study of such rare presentations may help inform future management strategies for pituitary carcinoma.

Figure 1. Axial T1-Weighted Brain MRI Showing a Brainstem Lesion



Legend: Axial post-contrast T1-weighted MRI demonstrating an enhancing 5.6 mm suprasellar mass invading the parasellar region, consistent with pituitary carcinoma, and a 6.3 mm enhancing lesion in the right cerebellum, consistent with metastatic spread from pituitary carcinoma. This well-circumscribed focus exhibits contrast uptake and reflects hematogenous dissemination.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

CASE STUDY**99. The Lupus You Didn't See Coming: Secondary Evans Syndrome with Fulminant Autoimmune Myocarditis in a Young Woman**Tooba Fatima Iram¹, Yusra Fatima Anam, Haroon Abdullah Shaheed¹, Rahul Kumar Agarwal¹, Raksha Kapali¹¹Care Hospitals

Background: Some cases in medicine feel like a thriller, where every test, every symptom, and every intervention builds suspense. We present a young woman whose illness unfolded like a high-stakes medical drama: chest pain, cardiogenic shock, hemolysis, and mystery antibodies all converging in a race against time.

The Case: A 25-year-old female arrived at the emergency room with seven days of dragging left-sided chest pain radiating to the neck, back, and arms, accompanied by shortness of breath (NYHA II–III), palpitations, sweating, orthopnea, and facial puffiness. One day prior, she developed black stools and non-bilious vomiting. On arrival, she was in cardiogenic shock, requiring noradrenaline infusion.

ECG revealed ST-elevation in aVR with global ST-depression, and echocardiography demonstrated global hypokinesia with moderate left ventricular dysfunction. Labs were dramatic: hemoglobin 6 g/dL, highly elevated troponin I, deranged liver function tests, unconjugated hyperbilirubinemia, positive direct Coombs test, and low complement levels (C3 and C4).

Immediate management included intravenous steroids, multiple blood transfusions, and plasma exchange. Serology revealed strong anti-histone antibody positivity with a completely negative ANA profile (anti-dsDNA, anti-Sm, anti-RNP). Coronary angiography was normal, confirming myocarditis as the source of troponin elevation. Ultrasound showed hepatosplenomegaly, and history uncovered a recent mismatched blood transfusion, complicating the hemolytic picture.

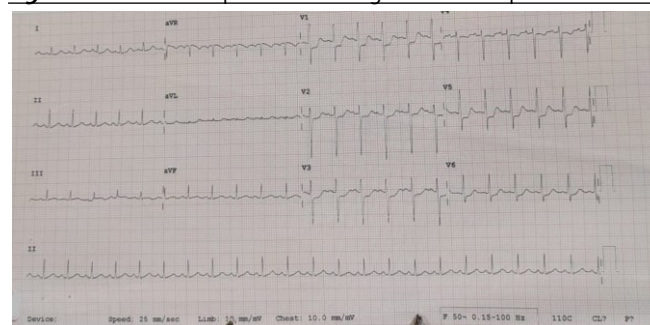
Through rapid multidisciplinary coordination including critical care, cardiology, hematology, rheumatology, and nephrology, the patient stabilized, hemoglobin improved, and she was discharged on a carefully tailored immunosuppressive regimen.

Conclusion:

This case is a diagnostic rollercoaster. Anti-histone positivity initially suggested drug-induced lupus, yet hypocomplementemia, secondary Evans syndrome, and fulminant myocarditis pointed toward an atypical or early-onset SLE. The presentation mimicked acute coronary syndrome, adding urgency and tension. It underscores that anti-histone antibodies should never be interpreted in isolation, and highlights the importance of integrating clinical, serological, and imaging data in complex autoimmune syndromes.

Some patients turn the ER into a thriller. Fulminant autoimmune disorders can masquerade as common emergencies, putting lives at immediate risk. Early recognition, rapid multidisciplinary intervention, and careful interpretation of serology are the keys to survival and successful outcomes. This is an incredibly rare presentation of anti-

histone positive lupus, with ours being the second reported case in literature.

Figure 1. lead ECG Strip Demonstrating Global ST Depression.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open
Library
Publishing

CASE STUDY

100. An Uncommon Presentation of Systemic Sclerosis with Pulmonary Hypertension: A Case Report

Kedar Kulkarni.¹¹Department of Electrical Engineering, Indian Institute of Technology Kanpur, Kanpur, Indi

Background: Systemic sclerosis is a rare autoimmune condition that carries high mortality rates due to its varied and often hidden presentations. It is broadly classified into limited and diffuse systemic sclerosis, with the latter associated with a poorer prognosis because of its pulmonary, cardiac, and renal complications. Pulmonary hypertension and interstitial lung disease in diffuse systemic sclerosis (dcSSc) are serious complications that are difficult to diagnose due to their occult and insidious course. These manifestations not only increase morbidity and mortality but also result in significant out-of-pocket healthcare expenditure, especially among individuals with limited access to specialized care. We present a rare case of dcSSc complicated by pulmonary hypertension and interstitial lung disease, emphasizing the need for screening, early detection, and multidisciplinary treatment, especially among high-risk individuals.

The Case: A 53-year-old Caucasian female presented with a six-month history of progressive dyspnea, dysphagia, Raynaud's phenomenon, and fatigue. She also had proximal interphalangeal joint swelling, unintentional weight loss, and cutaneous changes such as sclerodactyly, calcinosis cutis, and telangiectasias. The skin thickening was diffuse, extending to the trunk, suggesting a diagnosis of diffuse cutaneous systemic sclerosis (dcSSc). Nailfold capillaroscopy revealed dilated capillaries, further supporting the diagnosis of dcSSc.

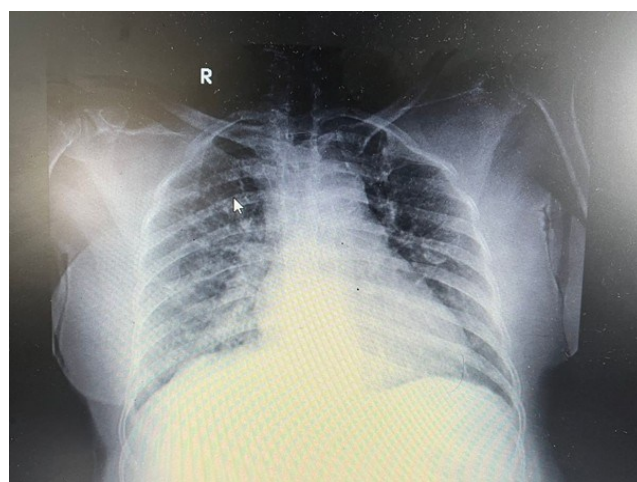
Laboratory findings were significant for positive ANA with centromere patterns with elevated anti-Scl-70 antibodies. Persistent and progressive dyspnea prompted imaging, which revealed mild interstitial lung disease (ILD) on high-resolution CT and pulmonary hypertension (PH) on echocardiogram, with right ventricular hypertrophy. Pulmonary function tests confirmed reduced diffusing capacity (DLCO). This constellation of findings met the ACR/EULAR 2013 criteria for dcSSc with pulmonary involvement.

A multidisciplinary approach was taken to initiate management in order to address the various systemic manifestations observed. This included immunosuppression with cyclophosphamide (15 mg/kg every 3 weeks) for ILD and bosentan, an endothelin receptor antagonist, for PH. Gastroesophageal reflux and dysphagia were treated with proton pump inhibitors and speech therapy. A common complication of systemic sclerosis is the development of joint contractures, for which physical therapy was initiated.

Conclusion: This case exemplifies the complexity and vigilance required in managing dcSSc complicated by pulmonary hypertension and interstitial lung disease. The insidious onset of symptoms such as fatigue and dysphagia initially suggested gastrointestinal involvement, while pulmonary and cardiac complications remained

hidden. Such varied presentations often delay diagnosis, underscoring the importance of heightened clinical suspicion and regular screening in patients at risk. Furthermore, the presence of anti-Scl-70 antibodies signaled a more aggressive disease course. Early recognition of cardiopulmonary complications is thus pivotal, enabling timely initiation of targeted therapies, including endothelin receptor antagonists for pulmonary hypertension and immunosuppressive agents for interstitial lung disease, both of which are critical for improving survival and quality of life. Effective management of dcSSc necessitates a multidisciplinary approach involving rheumatologists, pulmonologists, gastroenterologists, and physical therapists to address its multisystem involvement. A proactive diagnostic and therapeutic strategy, supported by coordinated care, as illustrated in this case, can meaningfully alter the otherwise poor trajectory of diffuse systemic sclerosis.

Figure 1. Chest X-Ray



Legend: Chest X-ray showing bilateral basal reticular opacities suggestive of early interstitial lung disease in a patient with diffuse cutaneous systemic sclerosis.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

CASE STUDY**101. Cat Scratch Disease in a Low-Prevalence Region: A****Case Report from Bangladesh.**Mahnoor Fatima,¹ Forhad Hossain,¹ Karma Dicky Sherpa,¹Ahmed Al Montasir,¹ Md. Zakir Hossain.¹¹TMSS Medical College, Bangladesh

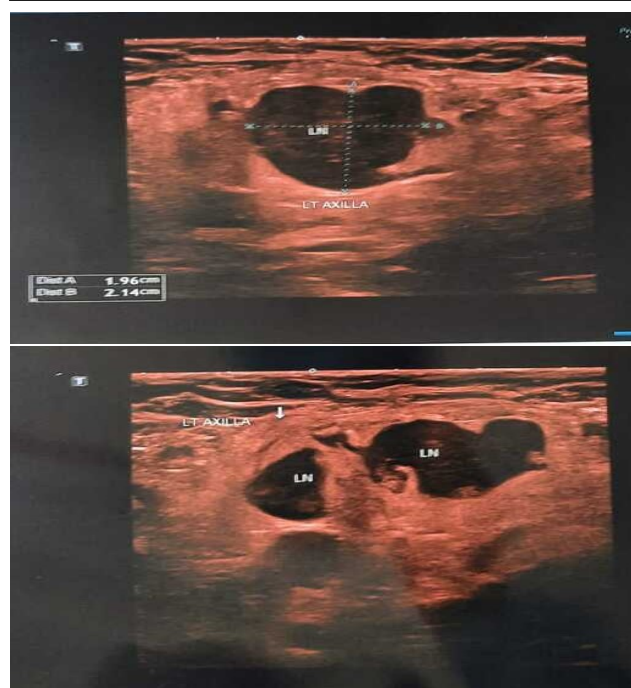
Background: Cat Scratch Disease (CSD), caused by gram-negative bacillus *Bartonella henselae*, is transmitted through cat scratches or bites, leading to regional lymphadenopathy, fever, and malaise. It is self-limiting but can result in severe complications in immunocompromised patients, including bacillary angiomatosis or encephalitis. In South Asia, including Bangladesh, the prevalence of CSD is not well-understood due to scarce data, and it is often misdiagnosed because of its similarities to other illnesses, such as tuberculosis. Diagnostic tools like fine-needle aspiration cytology (FNAC), serologic tests (IFA and ELISA), and imaging are essential for accurate identification. A study in Bangladesh between 2018 and 2020 revealed that 15.1% of healthy cats carry *Bartonella* spp., confirming the risk of CSD in the area. This report discusses a previously healthy 38-year-old female with persistent axillary swelling following a recent cat scratch.

The Case: A 38-year-old female with no significant past medical history and no prior history of tuberculosis or malignancies presented to the medicine outpatient department (OPD) with complaints of swelling in the left axillary region. The swelling was accompanied by mild pain localized to the left axilla, malaise, and a low-grade fever persisting intermittently for about one week, ranging from 101 to 102°F. Upon history taking, the patient reported an incident of being scratched by a cat on her left wrist and forearm six weeks back. The cat was non vaccinated, and showed features of diminished appetite before and after the scratching episode. Two weeks after the scratch, she began to notice swelling in her left axilla, which progressively increased in size over the next four weeks. The patient denied any complaints of cough, shortness of breath, or weight loss. She reported maintaining a good appetite throughout the illness. Primary care physician made a differential diagnosis of lymphoma and tuberculosis and carried out relevant investigations except FNAC. Notable physical examination findings were localized tenderness and swelling of the left axillary lymph nodes. No signs of organomegaly were noted, and laboratory investigations showed no abnormalities that would suggest any of the differentials set by the primary care physician. Ultrasonogram of lymph nodes showed hypoechoic, oval, asymmetric masses with central hyperemia and possibly fluid collection and hyperechoic hilum (Figure 1). FNAC revealed granulomas with palisading epithelioid histiocytes and central neutrophils, along with a polymorphic cell population. Although confirmatory molecular (PCR) or serological (ELISA/IFA) testing for *Bartonella henselae* was not performed due to limited availability in the region, the diagnosis of Cat Scratch Disease was made based on clinical history, FNAC findings, and exclusion of other differential diagnoses. Azithromycin was started in oral form and her recovery was uneventful. Informed

consent was obtained from the patient for publication of this case report.

Conclusion: This case emphasizes the need for clinical suspicion of CSD in patients presenting with regional lymphadenopathy, particularly those with a history of cat exposure. The lack of advanced diagnostic tools in resource-limited settings, such as Bangladesh and India, contributes to substantial underdiagnosis. Early recognition and appropriate antibiotic therapy can prevent misdiagnosis and unnecessary investigations and interventions.

Figure 1. Ultrasound of an Axillary Lymph Node Showing Inflammatory Features.



Legend: The oval shaped axillary lymph nodes are appearing hypoechoic than the surrounding tissue on ultrasound, indicating inflammation or fluid. Increased blood flow within the lymph node, visualized as a hyperechoic or brighter area, is a characteristic feature. Hilum is hyperechoic and asymmetrically located.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY.**102. A Diagnostic Gray Zone: Isolated Left Oculomotor Nerve Palsy in the Setting of Hyperhomocysteinemia, Sphenoid Sinusitis, and Rathke's Cleft Cyst**

S Anton Charles,¹ Shaun Nevil,¹ Umesh G,¹ Sofia Mondal,¹
Chaitra C S.¹

¹. ESIC- Medical College and Post Graduate Institute of
Medical Science and Research, Bengaluru

Rathke's Cleft Cyst (RCC) is a benign, epithelium-lined cyst arising from remnants of Rathke's pouch, typically located in the sellar or suprasellar region, and is a documented cause of oculomotor nerve palsy via compressive mechanisms. The sphenoid sinus lies adjacent to the cavernous sinus, through which the oculomotor nerve passes, making inflammatory spread from sphenoidal sinusitis a potential but uncommon cause of cranial nerve involvement. Hyperhomocysteinemia, defined as elevated plasma homocysteine levels, is an established independent risk factor for endothelial dysfunction, prothrombotic states, and small-vessel ischemia, and has been implicated in cranial neuropathies. We report a case involving all three of these factors contributing to isolated oculomotor nerve palsy. A 26-year-old right-handed woman presented with progressive left-eye diplopia for two months, worse on near and right gaze, along with recurrent headaches and blurring of vision in the right eye. She denied trauma, slurred speech, limb weakness, or dysphagia. Neurological examination revealed isolated left oculomotor nerve palsy: restricted adduction, elevation, and depression, with ptosis and pupil sparing. Visual acuity was 5/6 bilaterally; other cranial nerves, motor, and sensory systems were normal. Labs showed elevated homocysteine (83.9 $\mu\text{mol/L}$) and low vitamin B12 (205 pg/mL). MRI revealed a Rathke's cleft cyst in the sellar region and left sphenoidal sinusitis. The patient responded well to a short course of corticosteroids, with resolution of diplopia and ptosis. This improvement supports an inflammatory or microvascular ischemic etiology rather than a purely compressive one. Previous studies associate hyperhomocysteinemia with microvascular cranial neuropathies, RCCs with compressive oculomotor palsy, and sphenoidal sinusitis with inflammatory extension to cranial nerves. Our case is unique in presenting all three concurrently, contributing to a diagnostic grey zone. Steroid responsiveness highlights a probable inflammatory and ischemic mechanism.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE STUDY**103. Acute Myeloid Leukemia in A Young Adult: Diagnostic Insights from a Case Report**

Jainishkumar Morker¹, Dr. Pinal Shah, Dr. Mubin Patel, Dr. Rahul Modi, Dr. Deepshikha Dave, Dr. Krutika Patel

¹ Government Medical College, Surat, India.

Background: Acute myeloid leukemia (AML) is a clonal hematopoietic stem cell disorder. It predominantly affects older adults and is characterized by the proliferation of immature myeloid cells and bone marrow failure. Diagnosis can be made using peripheral smear, cytochemistry, immunophenotyping, and cytogenetics, as early recognition is crucial for management and prognosis.

The Case: 21 year old male presented with fever, leukocytosis, mild anemia, and 75% of the blasts were medium-to-large size, with an irregular nuclear membrane, finely granular chromatin, nucleoli in peripheral blood smear with the presence of Auer rods, normocytic normochromic RBCs, and reduced platelets. Special stains such as myeloperoxidase (MPO) positivity, Sudan Black stain positivity, Periodic Acid-Schiff (PAS) negativity, and multicolor flow cytometry using CD45 vs. side scatter gating confirmed the diagnosis of Acute Myeloid Leukemia. Moreover, cytogenetic and molecular studies are recommended to improve prognosis and guide targeted therapy.

Conclusion: This case demonstrates how a thorough morphological evaluation and specific cytochemical tests can swiftly guide the diagnostic considerations for AML. Multicolor flow cytometry confirms lineage and facilitates the classification necessary for treatment planning. In young adults, where early intervention can significantly impact outcomes, combining traditional and modern diagnostic methods reduces the time to diagnosis and expedites referrals to the hematology/oncology department. This case underscores the ongoing educational and practical importance of peripheral smears and cytochemistry, especially in environments where immediate access to cytogenetic or molecular testing is limited.

Table 1. Immunophenotyping showing Myeloid Monocytic Markers Maturation Markers

CD34	Bright	Positive
CD13	Bright	Positive
CD33	Moderate	Positive
CD117	Moderate	Positive
CD64	Dim	Positive
HLA-DR	Dim	Positive
CD45	Dim	Positive

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE STUDY**104. Guillain-Barré Syndrome in the Setting of Acute Biliary Pancreatitis: A Rare Clinical Association**Dr. Shaheen Arshad¹, Dr. Haider Iftikhar¹, Maidah Ilyas¹¹ Pak Emirates Military Hospital, Rawalpindi, Pakistan.

Guillain-Barré syndrome (GBS) is an acute polyneuropathy often triggered by an antecedent infection. Common etiologies of GBS include C. jejuni, cytomegalovirus, HIV, influenza, and SARS-CoV-2. Antibodies to these infections can cross-react with shared epitopes on peripheral nerves, causing demyelination or axonal loss. Patients with GBS typically present with bilateral ascending flaccid paralysis, distal paraesthesias, and hyporeflexia.

Acute pancreatitis is an inflammatory condition of the pancreas, often caused by gallstones. Patients classically present with epigastric pain radiating to the back with nausea and vomiting. Pancreatitis is associated with a wide range of systemic complications. Shock, disseminated intravascular coagulation (DIC), sepsis, acute respiratory distress syndrome (ARDS), and renal failure are extensively described in the literature and commonly encountered in critical care settings. Despite the substantial body of work done on pancreatitis complications, one that remains absent from the literature is GBS.

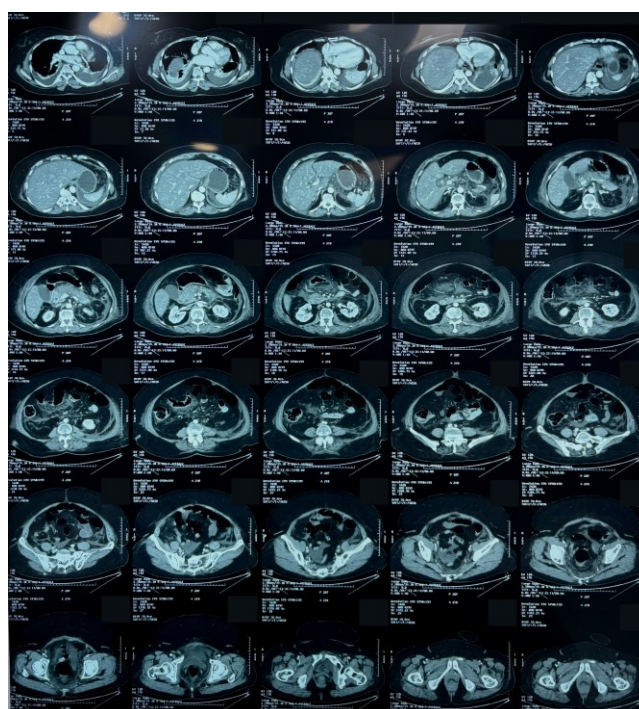
The Case: We report the case of a 67-year-old female with ischemic heart disease, hypertension, and megaloblastic anemia. She presented to the ER of a local hospital with epigastric pain radiating to the back and multiple episodes of vomiting. Ultrasound revealed a bulky pancreas and gallbladder mucocele. She was diagnosed with acute biliary pancreatitis (BISAP score 4) and admitted to the surgical ward. After developing persistent increased work of breathing, she was shifted to the ICU, where she was intubated. Contrast-enhanced CT abdomen demonstrated pancreatic swelling, peripancreatic fat stranding, inflammatory extension to the transverse colon, and a 4.2 × 2.3 cm hypoperfused area suggestive of early necrosis. Her clinical course was further complicated by the development of ARDS and acute kidney injury requiring hemodialysis. She remained on mechanical ventilation for 8 days. After extubation, it was noted that she was unable to lift her upper and lower limbs against resistance. Reflexes were absent in all limbs, but sensations were intact. The CT brain was unremarkable. Cerebrospinal fluid analysis showed a normal protein count (24.3 mg/dl) and a raised glucose level (111 mg/dl). Suspecting critical illness polyneuropathy, nerve conduction studies and electromyography were done. However, the results were consistent with the AMSAN variant of GBS. Plasma exchange (PLEX) with albumin replacement was started. A total of 5 sessions were done over the course of 2 weeks. Despite treatment, the patient's respiratory effort continued to decline, developing type II respiratory failure. She was managed on BiPAP as she did not consent to reintubation. After 2 weeks, the patient succumbed to her illness.

Conclusion

This case demonstrates a rarely reported association between acute pancreatitis and GBS. In the ICU setting, new-onset neuromuscular

weakness is often attributed to critical illness polyneuropathy. However, this case shows the importance of considering GBS in the differentials and performing electrophysiological studies to achieve an accurate diagnosis. Early recognition is crucial: studies show that PLEX is most effective when started within 7 days of symptom onset. Timely initiation of therapy can lead to improved functional outcomes. Further research is required to determine any potential shared immune-related mechanisms between acute pancreatitis and GBS and to better define management strategies in these patients.

Figure 1. Contrast-Enhanced Computed Tomography of the Abdomen and Pelvis (Axial Views).



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://openlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY

105. Diagnostic Challenges in Maxillary Telangiectatic Osteosarcoma: A Rare Case

Malak R. Hroub,¹ Mohanad Abuzahra,¹ Alhareth M. Amro,¹Mohammed A. Barakat,¹ Maha Ramzi, Basheer Babaa.¹¹Al-Quds University, Jerusalem, Palestine

Histologically, telangiectatic osteosarcoma is defined by blood-filled cystic spaces lined by high-grade malignant cells. This appearance leads to frequent diagnostic confusion with an aneurysmal bone cyst on both imaging and pathological examination.

Owing to its infrequency, aggressive behavior, and nonspecific clinical features, this variant poses significant diagnostic difficulties.

The Case: A 37-year-old woman presented with a rapidly enlarging right cheek swelling of 1 month's duration. It is associated with fresh blood coming out of the mouth. Later she reported a further increase in the swelling size, eventually impairing eating and speech. There is no history of trauma, systemic diseases, prior malignancies, or previous surgeries apart from dental prosthetic implants. On physical examination, there was a large, firm, right cheek swelling, non-pulsatile, non-compressible, without skin changes.

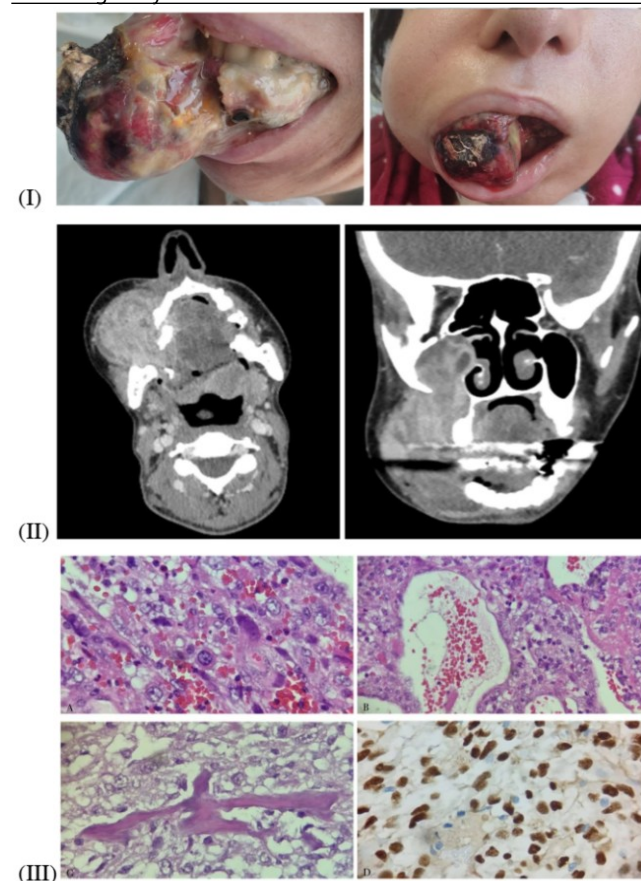
Computed Tomography (CT) scan showed a heterogeneously enhancing mass lesion occupying most of the right maxillary sinus, measuring about 7x5 cm, showing few foci of calcifications compatible with detached teeth, demonstrating aggressive features such as adjacent bone erosions and destruction of the alveolar maxillary ridge inferiorly and maxillary sinus wall posteriorly. In addition to exerting mass effect upon masticator muscles, it also has medial extension into the nasal and oral cavities, displacing the tongue into the contralateral side, causing airway narrowing. The patient was assessed by the maxillo-facial surgeons, who recommended tracheostomy to secure the airways.

An initial biopsy result revealed an inconclusive, poorly differentiated malignant neoplasm, given the aggressive clinical course and inconclusive results; repeat histopathological examination and immunohistochemistry was done and revealed a highly cellular malignant neoplasm predominantly composed of atypical spindle cells, with prominent vascularity and scattered areas of lace-like osteoid matrix production by the neoplastic cells. These features, along with the immunohistochemistry test, were suggestive of a poorly differentiated malignant neoplasm showing spindle and epithelioid features, consistent with telangiectatic osteosarcoma.

The diagnosis and treatment options were discussed with a multidisciplinary team and the patient, and the plan involved chemotherapy with MAP protocol (Methotrexate + Doxorubicin + Cisplatin) followed by surgical resection.

Conclusion: Very few cases exist regarding telangiectatic osteosarcoma, which is a unique type of osteosarcoma, and its occurrence in the maxillary sinus is even rarer. The diagnostic challenge arose during clinical judgement, histopathological, and radiological examinations, and the rapid progression of our patient's neoplasm during one month, causing profound impairment in swallowing and speech function and airway compromise, emphasizes the tumor's aggressive potential and necessitates early recognition of such complex craniofacial cancers that require a multidisciplinary approach involving airway management, oncology assessment, and function restoration and preservation, which shapes a framework for similar scenarios, especially in resource-limited healthcare settings.

Figure 1. Clinical, Radiological, and Histopathological Findings of an Oral Malignancy.



Legend: (I) Osteosarcoma of the maxilla. (II) Contrast enhanced CT of the face and neck showing a heterogeneously enhancing irregular soft tissue mass centered in the right maxillary bone, obliterating the right maxillary sinus, and extends into the oral cavity, oropharynx, temporal space, nasal cavity and the cheeks with erosion of the regional bones of the right maxilla and mandible; as tumor involved right mandibular ramus, medial and inferior walls of right maxillary sinus. No evidence of major vascular luminal narrowing. (III) A+B- Highly cellular malignant neoplasm predominantly composed of atypical spindle cells with hyperchromatic, pleomorphic nuclei and frequent mitotic figures. Prominent vascularity is observed, characterized by numerous thin- and thick-walled blood vessels distributed throughout the lesion. C- Scattered areas of lace-like osteoid matrix production by the neoplastic cells are evident. D- SATB4 immunostaining firms the osteoblastic differentiation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY**106. Surviving The Odds: A Rare Case of Untreated Transposition Of The Great Arteries In Adulthood With Neurological Manifestations**Sristi Chakraborty,¹ Monika P Jawanjal.¹¹Kasturba Medical College, Manipal, Manipal Academy of Higher Education, Manipal, India

Background: Dextro- transposition of the great arteries (dTGA) is a very rare congenital cardiac anomaly with an incidence of 0.02-0.05% that usually results in 90% infantile mortality, without surgical correction. Simultaneous interposition with other anomalies like atrial septal defect (ASD), ventricular septal defect (VSD), can enable survival beyond infancy, in some instances. However, long-term survival into adulthood remains exceptionally uncommon, especially when complicated with brain abscess- a known but serious complication of cyanotic CHD.

The Case: We present a case of Cyanotic congenital heart disease with d-TGA, VSD, ASD, dextro-cardia, complicated by a cerebral abscess.

A 28-year-old male presented with two episodes of focal seizures and one episode of loss of consciousness. The patient was previously diagnosed with cyanotic congenital heart disease at age 7 months, but chose not to opt for surgical intervention as there was no delay in developmental & intellectual milestones. Since then, he had multiple episodes of deepening of cyanosis with palpitations & giddiness, which were subsequently managed by blood letting & incomplete staged surgery.

Upon arrival at our hospital, he developed weakness over left-half of his body, which resolved spontaneously. On examination he was conscious and oriented. He also had, prominent bilateral EJV with central cyanosis and Grade 2 clubbing. CVS examination revealed Grade III mid-systolic murmur all over the precordium and apex beat at right sixth intercostal space along mid-clavicular line. CNS examination revealed no focal neurological deficit. All other systems were unremarkable.

Echocardiography and cardiac catheterization confirmed:

- Situs solitus with dextrocardia
- Large ASD and VSD with common atrium
- Pulmonary artery & aorta arising parallelly (dTGA)
- Severe valvular and infundibular pulmonary stenosis (PS)
- Hypoplastic right ventricle and normal left ventricular function

MRI brain revealed a right parietal lobe cerebral abscess. Blood and urine cultures were sterile.

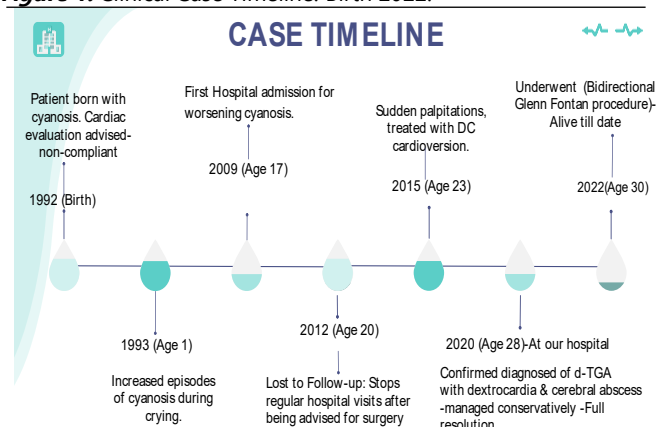
The patient was deemed unfit for neurosurgical drainage due to high cardiac risk. He was treated with IV vancomycin, ceftriaxone, and metronidazole for 6 weeks. He showed significant clinical improvement and was discharged hemodynamically stable. Two years

later, he successfully underwent Bidirectional Glenn → Fontan procedure with PA banding and atrial septectomy.

The patient remains alive & clinically stable till date and continues to come for periodic cardiology follow-up and has had no recurrence of cardiovascular or neurological complications.

Conclusion: In the present case, the VSD and atrial septal defect served as effective admixture lesions, permitting intermixing of systemic and pulmonary circulation, thereby maintaining some degree of oxygen saturation. Severe pulmonary limited pulmonary overcirculation, protecting the pulmonary vasculature and enabled long-term survival. However, long-standing right-to-left shunting predisposes to cerebral abscess and stroke, due to paradoxical embolization and impaired immune function. This case underscores the interplay of admixture lesions (VSD, ASD), protective pulmonary stenosis, leading to survival into adulthood in unoperated d-TGA.

Figure 1. Clinical Case Timeline: Birth 2022.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open Library Publishing

CASE STUDY

107. Giant Left Diaphragmatic Hernia Complicated With Intrathoracic Gastric Volvulus and Total Gastric Necrosis: An Uncommon Case Report

Sofia Rubiralta Adame¹, Martin Rodriguez Alvarado²,
Mariana Fraga Duarte³, Jack Abadi Chiriti⁴, Jair Ariel Nava
Vazquez², Emanuel Osmar Diaz Vega²

¹ Panamerican University School of Medicine, Mexico

² National Polytechnic Institute, Mexico

³ La Salle University School of Medicine, Mexico

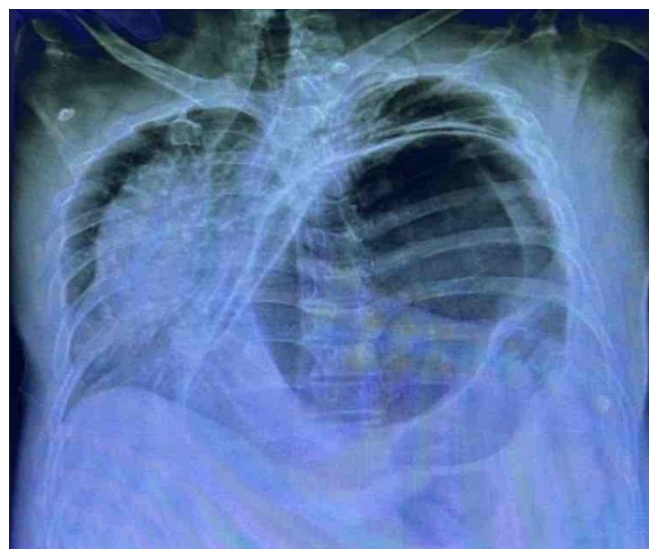
⁴ The American British Cowdray Medical Center, Mexico

Background: Diaphragmatic hernia in adults is an uncommon but potentially fatal condition. Diagnosis is often delayed because of nonspecific symptoms, predisposing patients to severe complications. Among these, intrathoracic gastric volvulus with necrosis is one of the most catastrophic, carrying a high risk of septic shock, multiorgan failure, and postoperative mortality exceeding 30–50% in critical settings. This case is notable for the size of the hernia, the extent of gastric necrosis, and the complexity of reconstruction required, while also underscoring the need for access to specialized critical care.

The Case: A 66-year-old male with cirrhosis, hypertension, and diabetes presented in extremis with severe abdominal pain, distension, and acute dyspnea progressing to refractory shock. He required mechanical ventilation and vasopressor support. Examination revealed abdominal distension, tracheal deviation, and absent left breath sounds. Chest radiography showed a massively distended stomach in the left hemithorax, with mediastinal shift and contralateral lung collapse. Emergency laparotomy demonstrated a 10 × 5 cm diaphragmatic defect containing a volvulated stomach with complete necrosis. Procedures included adhesiolysis, hernia reduction, diaphragmatic repair, total gastrectomy, and Roux-en-Y reconstruction with esophagojejunal and jejunojejunal anastomoses. A left chest tube and drains were placed. The surgery lasted nine hours with blood loss of 1500 mL. Postoperatively, the patient remained critically ill with hypovolemic and septic shock requiring dual vasopressors and ventilatory support.

Conclusion: Giant diaphragmatic hernia with intrathoracic gastric volvulus and total gastric necrosis is an exceptional, life-threatening condition. Successful management requires rapid diagnosis, immediate surgical intervention, multidisciplinary collaboration, and advanced critical care infrastructure.

Figure 1. Chest X-Ray:



Legend: Posteroanterior chest radiograph demonstrating a giant left diaphragmatic hernia with a markedly distended intrathoracic stomach, resulting in rightward mediastinal shift and collapse of the left lung. The findings are consistent with intrathoracic gastric volvulus and are suspicious for gastric ischemia or necrosis.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open
Library
Publishing

CASE STUDY**108. The Hidden Rhythm: A Rare Case of Isoarrhythmic Sick Sinus Syndrome Defying Chronotropic Expectations**

Tooba Fatima Iram,¹ Yusra Fatima Anam,¹ Haroon Abdullah Shaheed,¹ Rahul Kumar Agarwal,¹ Naazira Begum.¹

¹ Care Hospitals, India

Background: Isoarrhythmic sick sinus syndrome (SSS) is a rare and often under-recognized variant of sinus node dysfunction, where the sinus and junctional rates are nearly identical, masquerading as a normal rhythm. Typically, SSS is associated with chronotropic incompetence (the inability of the heart to appropriately increase its rate during exertion), leading to symptoms such as fatigue, syncope, or exercise intolerance. It remains a common indication for permanent pacemaker implantation. However, cases demonstrating preserved chronotropic response are extremely uncommon, and recognizing these can directly influence management strategies.

The Case: We present a 72-year-old male with longstanding hypertension and chronic tobacco use, who presented with progressive dyspnea over one month, bilateral leg swelling, palpitations, and productive cough. On examination, he was in sinus bradycardia (57 bpm), hypertensive (200/100 mmHg), and had signs of fluid overload. Initial ECG suggested second-degree AV block; however, careful analysis revealed junctional rhythm with intermittent sinus capture, consistent with isoarrhythmic AV dissociation, confirming SSS.

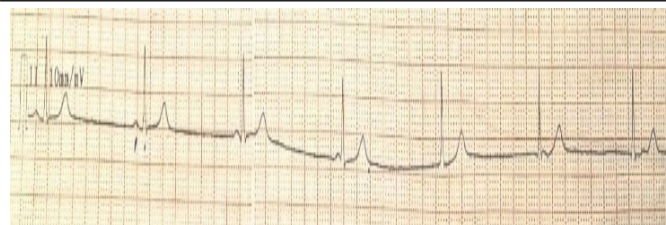
A 24-hour Holter monitor demonstrated a maximum sinus pause of 1.8 seconds, confirming sinus node dysfunction. To evaluate SA node function under physiological stress, a treadmill exercise test using the Bruce protocol was performed. Surprisingly, the patient exhibited a robust chronotropic response, with heart rate rising from 52 bpm to 133 bpm, without ischaemic changes or arrhythmias.

Management focused on controlling hypertensive emergency with intravenous antihypertensives and alleviating heart failure symptoms with diuretics. Given the preserved chronotropic competence, absence of syncope, and no severe bradycardia, permanent pacemaker implantation was deemed unnecessary. The patient was discharged in stable condition with close cardiology follow-up.

Conclusion: This case highlights isoarrhythmic SSS as a subtle but clinically significant variant of sinus node dysfunction, which can easily be misdiagnosed as AV block or overlooked due to near-identical sinus and junctional rates. It underscores the essential role of detailed ECG analysis, Holter monitoring, and exercise testing in evaluating sinus node function. Importantly, preserved chronotropic response challenges the conventional indication for pacemaker implantation, supporting a conservative, individualized approach in selected patients. Clinicians should maintain a high index of suspicion for isoarrhythmic SSS in elderly patients presenting with bradyarrhythmias, heart failure, or hypertensive crises. This case emphasizes that accurate diagnosis and functional assessment of the

sinus node can prevent unnecessary interventions, optimize patient outcomes, and provide insight into the nuanced spectrum of sinus node disorders.

Figure 1. CXR Massive Cardiomegaly and Right Lung Infiltrate.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrary.org/)

Pitt Open Library Publishing

CASE STUDY**109. When RASopathies Collide: A Case Highlighting the Continuum between Noonan and LEOPARD Syndromes**

Umesh G,¹ Sofia Mondal, Anton Charles,¹ Shaun Nevil,¹ Mansi Kumaraswamy.²

¹ ESIC- Medical College and Post Graduate Institute of Medical Science and Research, India

² Senior Resident, ESIC Medical College & PGIMSR, Bangalore, India

LEOPARD syndrome and Noonan syndrome are clinically overlapping RASopathies, both frequently associated with pathogenic variants in the PTPN11 gene, which encodes the SHP-2 tyrosine phosphatase. Typically, Noonan syndrome arises from gain-of-function variants, while LEOPARD syndrome results from loss-of-function alterations, most often distinguished by the presence of lentigines and cardiac anomalies. We report a diagnostically challenging case of a 17-year-old male who presented with behavioural disturbances, seizure disorder, visual and auditory hallucinations, and history of right orchidectomy and left-eye cataract. Physical examination revealed hypertelorism, low-set ears, high-arched palate, and dental overcrowding, but notably lacked lentigines or cardiac findings. Genetic analysis identified a heterozygous PTPN11 variant, p.Phe285Ser in exon 8, previously described in both LEOPARD syndrome 1 and Noonan syndrome 1. Ancillary investigations confirmed seizure activity on EEG but showed no abnormalities on ECG or MRI. This case highlights the diagnostic ambiguity inherent to RASopathies, where identical PTPN11 variants may underlie divergent phenotypes. The absence of cutaneous and cardiac manifestations traditionally considered pathognomonic for LEOPARD syndrome underscores the limitations of relying solely on phenotype for classification. Instead, this case supports a genotype-first diagnostic framework, where molecular findings refine and sometimes challenge clinical labels. Recognition of such overlap is critical for genetic counselling, prognostic assessment, and surveillance planning, as patients may deviate from usually documented syndrome descriptions. Our report adds to the growing body of evidence that PTPN11 p.Phe285Ser represents a mutational hotspot bridging Noonan and LEOPARD syndromes, reinforcing the continuum model of RASopathies.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

CASE STUDY**110. Management challenges encountered in a borderline personality disorder with multiple somatic diagnosis: A case report**Alexandra Zirbo,¹ Maria Palfi,¹ Cristina Maria Simian,¹¹ "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

Background: Borderline personality disorder (BPD) is a complex psychiatric condition characterized by pervasive instability in affect regulation, impulse control, interpersonal relationships, and self-image. Patients often present with comorbidities such as mood disorders, substance use, or somatic illnesses, which complicate diagnosis and treatment.

The Case: We present the case of a 26-year-old female with a history of major depression, known with borderline personality disorder, and multiple prior suicide attempts. The aim of this case report is to underline the therapeutic challenges in managing severe psychiatric illness in the context of complex somatic comorbidities. Psychiatric evaluation of the patient revealed depressive symptomatology with anhedonia, suicidal ideation, fatigability and social withdrawal. Somatically, the patient had a recent diagnosis of Child-Pugh A liver cirrhosis, ulcerative colitis, and primary sclerosing cholangitis, requiring careful therapeutic adjustments. The extent of hepatic damage suggested the potential need for future liver transplantation. Pharmacological management included antidepressants, antipsychotics, and benzodiazepines.

Conclusion: This case underscores the ethical and clinical challenges of considering liver transplantation in a patient with a personality disorder. Although prior suicide attempts complicate prognostic assessment, the patient remained adherent to both pharmacological treatment and medical rehabilitation, underscoring that psychiatric illness alone should not preclude access to life-saving interventions, which must be considered through individualized, multidisciplinary evaluation.

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt | Open
Library
Publishing

CASE STUDY**111. Atypical Presentation of a Hypopharyngeal Leiomyoma:****Case Report**

Jair Ariel Nava Vazquez¹, Martin Rodriguez Alvarado¹,
Alessandro Nava Torres², David Rui-Jing Guo³, Neil Parikh⁴,
Ramon Adrian Magaña Davalos⁵

¹ Instituto Politécnico Nacional, Ciudad de México, México.

² Universidad Autónoma de Guadalajara, Mexico

³ New York University, NY, USA

⁴ University of Virginia, VA, USA

⁵ Universidad de Monterrey, Mexico

Leiomyomas are benign tumors of smooth muscle origin, most frequently located in the uterus and gastrointestinal tract. Their presence in the hypopharynx is extremely rare due to the limited amount of smooth muscle in this region, and clinical manifestations are often nonspecific, including dysphagia, globus sensation, and pharyngeal discomfort, which may mimic malignant disease. We report the case of a 63-year-old male with a history of gastroesophageal reflux disease (GERD) and Barrett's esophagus who presented with a one-year history of dyspepsia, globus sensation, and progressive dysphagia. Endoscopic evaluation revealed a small lesion on the posterior hypopharyngeal wall, further confirmed by contrast-enhanced computed tomography as a 7 × 6 × 4 mm homogeneous, hypervascular, pedunculated mass without cervical lymphadenopathy. The patient underwent endoscopic cold-cut resection, which led to complete symptom resolution. Histopathological analysis demonstrated a well-circumscribed neoplasm composed of spindle-shaped cells arranged in fascicles, with no atypia, necrosis, or abnormal mitoses. Immunohistochemistry revealed diffuse positivity for smooth muscle actin, confirming the diagnosis of hypopharyngeal leiomyoma. The postoperative course was uneventful, with continued GERD management. This case illustrates an exceptionally rare benign tumor of the hypopharynx, emphasizing the importance of including such entities in the differential diagnosis of patients with nonspecific pharyngeal symptoms. Accurate diagnosis requires thorough endoscopic and radiological evaluation combined with histopathological confirmation. Complete surgical excision remains curative, providing excellent prognosis with minimal risk of recurrence. This report contributes to the limited literature on hypopharyngeal leiomyomas and highlights the value of a multidisciplinary approach in their management.

Figure 1. Sagittal Head CT: Nasopharynx and Cervical Spine



Legend: Computed tomography of the neck. Presence of a polypoid projection measuring 7 × 6 × 4 mm, with homogeneous enhancement after contrast administration.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt | Open
Library
Publishing

CASE STUDY**112. When Bone Forms in the Endometrium: A Case of Osseous Metaplasia Presenting with Chronic Pelvic Pain and Abnormal Uterine Bleeding**

Wilson Sebastian Peñafiel-Pallares,¹ Camila Brito-Balanzategui,¹ Oscar Venegas-Baca.²

¹ Universidad de las Americas, Ecuador

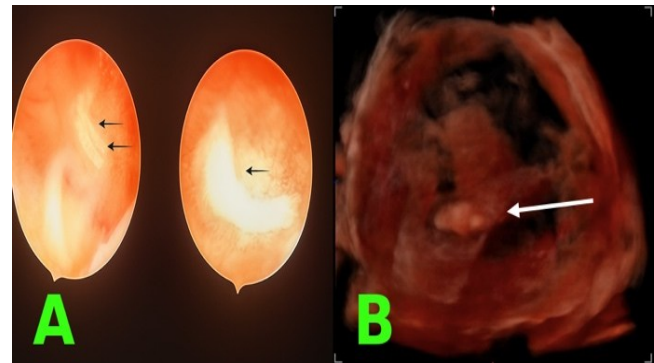
² Hospital de Nueva Aurora-Luz Elena Arismendi, Ecuador

Background: Endometrial osseous metaplasia is a rare condition characterized by the transformation of endometrial stromal cells into osteoblast-like cells. Its etiology remains uncertain, but proposed risk factors include a history of abortion and chronic intrauterine inflammation. This condition is clinically relevant because it can cause infertility, abnormal uterine bleeding, and pelvic pain, particularly in young women. Early recognition and management are crucial to avoid long-term sequelae.

Case: A 20-year-old woman with past medical history of spontaneous abortion six months ago, presented with pelvic pain and abnormal uterine bleeding. Transvaginal ultrasonography revealed echogenic structures suggestive of intrauterine calcifications. Hysteroscopy confirmed the presence of osseous tissue within the endometrial cavity, which was completely resected. Histopathology confirmed the diagnosis of endometrial osseous metaplasia. The postoperative course was uneventful, and symptoms resolved following treatment.

Conclusion: Endometrial osseous metaplasia, though rare, should be considered in young women with recent abortions presenting with abnormal uterine bleeding, pelvic pain, or infertility. Ultrasonography serves as a valuable initial diagnostic tool, while hysteroscopy remains the gold standard for both diagnosis and treatment. This case highlights the importance of clinical awareness to ensure timely recognition and management of this uncommon entity.

Figure:1. Hysteroscopy and Three-Dimensional Reconstruction Demonstrating Foreign Material Within the Endometrial Cavity.



Legend: Endometrial osseous metaplasia in hysteroscopy and transvaginal ultrasound. (A) Black arrows showing small, white, irregular foreign bodies, found on endometrial cavity during hysteroscopy. (B) Three-dimensional reconstruction of the uterine cavity showing irregular echogenic areas corresponding to osseous fragments (white arrow).

This work is licensed under a [Creative Commons Attribution 4.0 International License](#)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](#)

Pitt Open Library Publishing

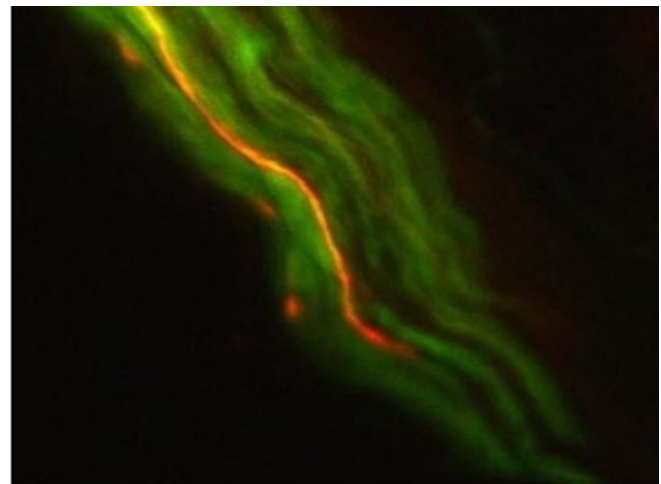
CASE REPORT**113. Early Detection of alpha-synuclein deposition within Two Years Diagnosis of REM Sleep Behavior Disorder and Consequential Prevention of Parkinson's**Hiba Khan.¹¹ The Kentucky College of Osteopathic Medicine, USA

Background: Early diagnosis of REM sleep behavior disorder (RBD) offers a valuable prognostic indicator for individuals at risk of neurodegeneration through their progression into Parkinson's disease. The prognosis of RBD in relation to worsening symptoms can be determined using epidermal nerve punch biopsies and immunohistochemistry to assess the degree of alpha-synuclein aggregation.

The Case: A 72-year-old white woman with a two-year history of REM sleep behavior disorder (RBD) is present with the neurologist for a follow-up appointment for evaluation of Parkinson's disease. She was diagnosed with RBD through an evaluation in the ER for her injured hip from falling out of bed after acting out her dreams. She has a familial connection to Parkinson's disease through her sister. She has been educated on RBD and its correlation to the risk of Parkinson's disease. Being educated on upcoming research to prevent progression of synucleinopathy, she agreed to be a part of this study; therefore, we decided to obtain epidermal nerve biopsies to look for possible alpha-synuclein proteins. The posterior cervical epidermal nerve biopsy was found to be positive for alpha-synuclein proteins. The patient is told of the prognosis, that research suggests she could present with PD symptoms with dysautonomia a decade from now. Clonazepam is effectively managing her RBD symptoms; however, she is aware of research being conducted for preventing synucleinopathy progression.

Conclusion: Investigating the underlying causes of Parkinson's disease is essential for both advancing preventive strategies and providing patients with clearer expectations regarding disease progression. Epidermal nerve biopsies have been found to have a high sensitivity rate of detecting the relationship between Parkinson's disease and RBD. Progression of synucleinopathy is suggested to cause neurodegeneration in those with RBD who later progress to PD.

Figure 1. Alpha-Synuclein Immunofluorescence Staining.



Legend: Immunofluorescent staining of alpha-synuclein deposition on a fiber of the posterior cervical epidermal biopsy. The orange and red streaks indicate alpha-synuclein deposition.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ISSN 2076-6327

This journal is published by [Pitt Open Library Publishing](https://pittopenlibrarypublishing.com/)

Pitt Open
Library
Publishing