

### 03. EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF COVID-19 RELATED MORTALITY IN OYO STATE, NIGERIA

Uzochukwu Eustace Imo<sup>1</sup>, Chimaobi Ikenna Nwagu<sup>1</sup>, Innocent Chijioko Dike<sup>1</sup>, Ayodeji Jeremiah Abimbola<sup>1</sup>, Oluwaseun Ebenezer Fatunla<sup>2</sup>.

<sup>1</sup> Sixth-year Medical Student. University of Ibadan, Ibadan, Nigeria.

<sup>2</sup> College of Medicine, University of Ibadan, Ibadan, Nigeria.



<https://www.youtube.com/watch?v=0JIMP5Fyl7s&t=11973s>

**INTRODUCTION:** On March 11, 2020, the World Health Organization classified COVID-19 as a pandemic. SARS-CoV-2, the virus that causes it, travels from person to person through respiratory secretions, direct contact, and aerosol. Although the COVID-19 pandemic has abated, it still infects pockets of susceptible populations around the world. Over 600 million COVID cases and 6 million deaths have been recorded globally with over 3000 deaths recorded in Nigeria. There is, however, a paucity of published research from Africa describing the epidemiological and clinical characteristics of COVID-19 decedents. The aim of this study is to recognize the epidemiological characteristics and comorbidities of COVID-19 mortality cases in Oyo state, Nigeria. Furthermore, this paper aims to understand the relationship between these epidemiological characteristics, comorbidities, and COVID-19 mortality. Understanding the relationship between these variables and COVID-19 mortality would contribute to the existing body of knowledge regarding the early detection and effective management of COVID-19 cases, thereby reducing the morbidity and mortality associated with COVID-19.

**METHODS:** This is a retrospective cross-sectional study of COVID-19 mortality that occurred in Oyo state, Nigeria between April 12, 2020 and March 12, 2021. A total of 121 confirmed COVID-19 related mortality cases were recorded during this period. Reverse-transcriptase polymerase chain reaction (RT-PCR) testing of nasopharyngeal and oropharyngeal samples was used to confirm SARS-CoV-2 infection. Data collected included age, sex, occupation, local government area, duration of hospitalization, comorbidities, clinical diagnosis, place of date, antemortem, and postmortem COVID-19 status. The independent t-test and Mann-Whitney U/Kruskal-Wallis H test were used to evaluate continuous variables, while a test of proportion and the Chi-square test were used to investigate categorical variables. Statistical analyses were performed with STATA/MP 14.2. **RESULTS:** The majority of the deceased were male patients (57%) compared to female patients (43%). Mortality was highest among those aged 40 years and above (92.5%) compared to those less than 40 years old (7.5%). The mean age of the deceased was 64 years. Hypertension (36.4%) and diabetes (26.5%) were the most common underlying conditions reported and significant associations were found between having a comorbidity and sex ( $p = 0.028$ ). Almost one-third (31.6%) of the included cases died within a day of hospitalization and the median duration between hospital admission and death was 1 day. There was a significant difference between the duration of hospitalization and status at death. Patients managed as suspected cases had a shorter median duration of hospitalization before death (1.0; IQR 0.5, 2) compared to the confirmed cases (4.0; IQR 1, 8). **CONCLUSION:** The results of this study showed that a high proportion of the COVID-19 mortality cases were of age greater than 40 years, male gender, and had comorbidities. Knowledge of these associated characteristics can help physicians identify and effectively manage patients with increased risk for severe outcomes of COVID and hence reduce mortality. It is

recommended that people with an increased risk of severe outcomes be vaccinated against COVID-19.

**Table.** Test of Association Between Age, Gender and Comorbidity.

|              | Age, n (%) |              |               |               |             | p-value      | Gender, n (%) |                | p-value       |
|--------------|------------|--------------|---------------|---------------|-------------|--------------|---------------|----------------|---------------|
|              | <20<br>n=2 | 20-39<br>n=7 | 40-59<br>n=35 | 60-79<br>n=61 | ≥80<br>n=16 |              | Male<br>n=68  | Female<br>n=52 |               |
| Any one      | 0 (0.0)    | 3 (42.9)     | 24 (68.6)     | 34 (56.7)     | 8 (50.0)    | <b>0.240</b> | 45 (66.2)     | 24 (46.2)      | <b>0.036*</b> |
| Hypertension | 0 (0.0)    | 0 (0.0)      | 15 (42.9)     | 24 (39.3)     | 5 (31.3)    | <b>0.185</b> | 26 (37.7)     | 18 (34.6)      | <b>0.729</b>  |
| Diabetics    | 0 (0.0)    | 1 (14.3)     | 13 (37.1)     | 16 (26.2)     | 2 (12.5)    | <b>0.297</b> | 18 (26.1)     | 14 (26.9)      | <b>0.918</b>  |
| Cancer       | 0 (0.0)    | 0 (0.0)      | 3 (8.6)       | 3 (4.9)       | 0 (0.0)     | <b>0.686</b> | 3 (4.4)       | 3 (5.8)        | <b>0.721</b>  |
| Renal        | 0 (0.0)    | 1 (14.3)     | 2 (5.7)       | 1 (1.6)       | 2 (12.5)    | <b>0.309</b> | 3 (4.4)       | 3 (5.8)        | <b>0.721</b>  |
| Others       | 0 (0.0)    | 1 (14.3)     | 3 (8.6)       | 6 (9.8)       | 1 (6.3)     | <b>0.959</b> | 7 (10.1)      | 4 (7.7)        | <b>0.642</b>  |

**Legend:** statistically significant variables at  $\alpha = 0.05$

**Key words:** COVID-19; SARS-COV-2; Pandemics; Nigeria (Source: MeSH-NLM).