ORIGINAL RESEARCH

36. What Medical Students Can Learn from the 2024 Dengue Outbreak in Pakistan: Clinical Spectrum, Biochemical Abnormalities and Predictors of Severity

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https://www.youtube.com/watch?v=4rJ3DHWeKRs&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.

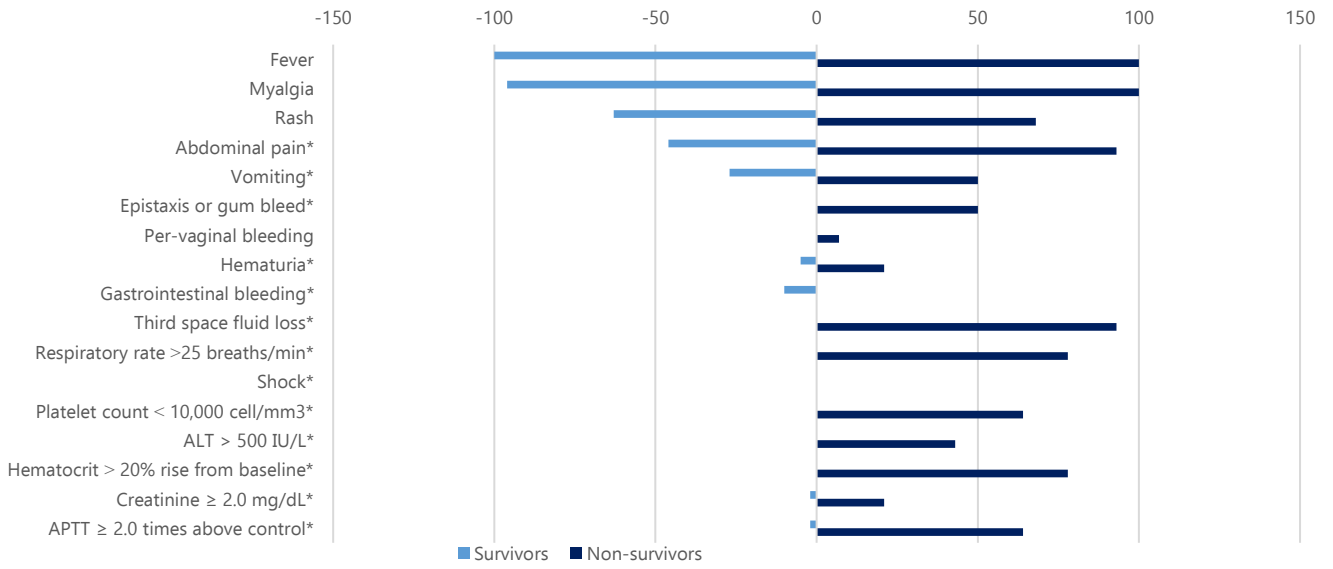
Methods: This prospective cohort hospital-based study was carried out at Fauji Foundation Hospital Rawalpindi from August to November 2024. DF was diagnosed on the basis of positive Dengue NS-1 antigen or IgM antibody or both. Patients under 12 years, having other causes of fever or chronic co-morbid 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 sign"s (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/mm 3 , 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



ISSN 2076-6327

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