

CLINICAL AND LABORATORY DYNAMICS OF SEVERE DENGUE PATIENTS DURING THE 2025 OUTBREAK IN BANGLADESH

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Background: Dengue infection remains a major cause of hospitalisation in endemic regions such as Bangladesh, with severe cases significantly contributing to morbidity and mortality. Severe dengue is characterised by plasma leakage, haemorrhagic manifestations, and organ involvement, often necessitating prolonged inpatient care. This study aimed to evaluate dynamic clinical, haematological, and biochemical parameters among hospitalized severe dengue patients during the 2025 outbreak. **Methods:** A prospective observational study was carried out from 11 September 2025 to 10 November 2025 involving 150 patients with severe dengue infection admitted to the DNCC COVID-19 dedicated hospital in Bangladesh, following the WHO 2025 criteria. Clinical features, comorbidities, blood counts (CBC), and biochemical parameters were recorded and analysed using descriptive statistics. Serial measurements of platelet count, haemoglobin, and lymphocyte count were taken at four time points. These were assessed using repeated-measures analysis of variance (ANOVA). Additionally, binary logistic regression was performed to evaluate the predictive value of selected variables for a prolonged hospital stay (>7 days). **Results:** The mean age of the study population was 41.23±14.43 years, with 78.7% having AntiIgG positivity and 40% having IgM positivity, indicating previous dengue infection. By location, 46.4% from Narayanganj and 17.9% from Dhaka city. The most common presenting features were fever (100%), bodyache (56.7%), headache (47.3%), and nausea (48.7%). Among the plasma leakage manifestations, shock (37.3%), hematemesis and melena (20.7%), ascites (38%), skin rash (22.7%), and positive tourniquet test (28%) were present. Hypertension (14%) and Diabetes mellitus (12.7%) were the most frequent comorbidities. Baseline laboratory profile showed low platelet count (38546±16616 /L), hematocrit (44.98 ±2.88%), WBC (5092 ±1787 /L), lymphocyte (45.03±5.56%), alanine transaminase (107.46±97.27 U/L), and aspartate transaminase (159.42±164.96 U/L). The repeated-measures demonstrated significant time-dependent changes in platelet counts (F=1342.65, P<0.001), hematocrit (F=, P<0.001), and lymphocyte counts (F=, P<0.001). Mean duration of hospitalisation was 6.45±1.4 days (range 4–11 days). Binary logistic regression analysis to identify predictors of prolonged hospital stay (>7 days), revealing that fever, bleeding (hematuria), and chest involvement were stronger predictors (P<0.05) than baseline hospital stays. **Conclusion:** Hospitalised patients with severe dengue experience dynamic haematological and biochemical changes throughout their clinical course. Platelet recovery and haematocrit stabilisation serve as key markers of improvement and are linked with readiness for discharge. Serial monitoring supports timely clinical decision-making in patients with complications.

Keywords: Severe dengue, Hematological changes, Hospitalization outcomes

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