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Hypocalcemia in Dengue Patients: A Single Center Observational Study in Central Sri Lanka

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Introduction: Dengue is known to be fatal due to the limited evidence of pathogenesis and specific treatment options. Serum calcium is very important in cardiac functions, haemostasis and immunopathogenesis.

Objective: To explore the prevalence of hypocalcaemia among the dengue patients presented to Medical Wards, Teaching hospital, Peradeniya and its association with the severity of the disease.

Methods: This is a descriptive observational study. Data were collected from the clinically diagnosed patients presented to Medical Wards, Teaching Hospital, Peradeniya. According to the laboratory reference range, the normal range of corrected calcium levels was indicated between 2.2 to 2.6 mmol/dl.

Results: The sample size was 386 and the mean age was 35.2 ± 15.79 years, while the majority were males (n = 205, 53,1 %). Mean serum Calcium level of the total sample was 2.1 ± 0.16 mmol/L (range = 1.18 – 2.22). There were 122 dengue hemorrhagic fever (DHF) patients (31.6%). Mean serum Calcium level of DHF patients was 2.06 ± 0.13 mmol/L while it was 2.13 ± 0.17 mmol/L in dengue fever (DF) patients. It is significantly lower than patients with DF ($p < 0.001$). Prevalence of low serum calcium levels in DF and DHF patients was 69.3% (n =183) and 92.1% (n =116), ($p < 0.05$).

Conclusions: Individuals with DHF had considerably lower serum Ca2+ levels than patients with DF, and hypocalcemia was more common. This might be used to evaluate the severity of the disease. We suggest that further research is needed to assess the effectiveness of calcium as a specific treatment option in preventing the severity of dengue.

Keywords: Dengue, Dengue hemorrhagic fever, Serum calcium levels, Severity of dengue