Study of Hyperferritinaemia in Children with Dengue Fever in a Tertiary Care Hospital

Dr. Ashiq Varghese
Chettinad Hospital and Research Institute, Kelambakam, Tamil Nadu, India

Abstract

Background: Dengue fever is one of the commonest arboviral infections in tropical countries and is a major public health concern, with significant morbidity in pediatric populations. The clinical spectrum ranges from uncomplicated dengue fever (DF) to dengue with warning signs and severe dengue with shock, bleeding and multiorgan dysfunction. Ferritin is a ubiquitous iron-storage protein produced predominantly by the reticuloendothelial system (monocytes, macrophages and hepatocytes) as well as an immunomodulatory molecule. Serum ferritin, an acute phase reactant, is increasingly recognized as a marker of severe dengue due to its association with hyperinflammation and macrophage activation.

Objectives: To study the prevalence, clinical correlation, and prognostic significance of hyperferritinaemia in children diagnosed with dengue fever in a tertiary care hospital.

Methods: A hospital based observational study was conducted among children aged 1 year to 15 years with laboratory confirmed dengue infection. Serum ferritin levels were measured and categorized. Clinical features, hematological parameters, and outcomes were compared between children with Dengue with normal ferritin and hyperferritinaemia. Statistical association was analyzed.

Results: Out of total of 50 children with mean age of the children were 10.5 years and SD 3.5 years, and 57% were male who were majority. Mean hospital stay duration was 5.2 days. Most of the patients in study discharged in 5-7 days of admission in hospital. The mean serum ferritin levels among cases with DHF were raised than those with DF with significant p-values of< 0.05 on Day 4 and 5 of illness. A higher frequency of hyperferritinaemia was noted among children with severe dengue, thrombocytopenia, plasma leakage, and shock. Raised ferritin levels showed significant correlation with prolonged hospital stay and need for intensive care.

Conclusion: Hyperferritinaemia is common in pediatric dengue and correlates with disease severity and adverse clinical outcomes. Serum ferritin may serve as an early prognostic indicator and assists in clinical risk stratification at admission as well as a dynamic marker of response to therapy in critically ill children with dengue in tertiary care.

Keywords

Dengue fever, hyperferritinaemia, pediatric, ferritin, severity markers, tertiary care.