https://doi.org/10.31705/FOMAAS.2025.028

Association between E/β Thalassemia severity and blood parameters among Sri Lankan cohort.

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Introduction - E/β thalassemia is prevalent among South Asian, Mediterranean, Middle Eastern, African, East Asian and Chinese populations, with a notable burden in Kurunegala, Badulla and Anuradhapura in Sri Lanka. Patients often present with clinical features similar to β-thalassemia major, making management challenging. Early detection of complications through key laboratory parameters is essential for improving outcomes. This study aimed to identify associations among haemoglobin (Hb), serum ferritin, ALT and AST in E/β thalassemia patients to support clinical decision-making.

Methods - A retrospective cohort study was conducted using medical records of 95 E/β thalassemia patients from the Kurunegala Teaching Hospital thalassemia unit. Demographic data included gender, age at diagnosis, age at first transfusion and age at splenectomy. Laboratory parameters (Hb, ferritin, ALT, AST) were analysed for three time points: 2010, 2015 and 2020. Spleen size at splenectomy was also reviewed.

Results - Females constituted 53.7% of patients. The mean age at diagnosis was 5.35 ± 6.787 years, while the mean ages at first transfusion and splenectomy were both 13.75 years. Mean spleen size prior to splenectomy was 14 ± 4.348 cm. Hb levels were <7.0 g/dl in 2010 but were maintained near 7.0 g/dl in 2015 and 2020. Serum ferritin levels exceeded 1000 ng/ml across all years. ALT peaked in 2015 (78.08 ± 202.18 U/L). Several patients had undergone transfusions before confirmed diagnosis.

Discussion - Findings demonstrate variable early diagnosis and highlight that splenectomy around a spleen size of 14 cm may be optimal. Routine correlation of Hb, ferritin and ALT were identified as valuable for monitoring disease progression and preventing complications. Regular ALT assessment alongside ferritin may improve liver-related complication detection in E/β thalassemia patients.