

Title: Early T precursor acute lymphoblastic leukemia - A case series

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Introduction: Early T precursor acute lymphoblastic leukemia (ETP-ALL) is a neoplasm composed of blasts committed to the T-cell lineage with a unique immunophenotype that includes expression of stem cell markers and/or myeloid lineage markers. The diagnosis and management of ETP-ALL is still challenging, especially for relapse/refractory disease.

Aims and objectives : To study the prevalence, clinicopathological characteristics and immunophenotypic profiles of cases diagnosed as ETP-ALL and their follow up.

Material and Methods: Twenty nine newly diagnosed cases of ETP-ALL between Jan 2021 to Feb 2024 were included in the study. The relevant clinicopathological and follow up measurable residual disease(MRD) data was retrieved from the files archived at BIACH & RI, Hyderabad. Flow cytometry was done using CD45, CD34, HLADR, CD19, CD79a, CD10, CD1a, CD2, sCD3, cCD3, CD4, CD5, CD7, CD8, CD56, cytoMPO, CD33, CD13 and CD117 panel on Beckman DxFlex with Kaluza software version 2.1.

Results: The age ranged from 8 to 63 years with a median age of 21 years. There was male predominance with a male to female ratio of 3.1:1. Leucocytosis was seen in 20 cases (68.9%) and leucopenia in 9 cases (31%). Lymphadenopathy was seen in 16 cases (55.1%) and hepatosplenomegaly in 4 cases (13.7%). Haemoglobin levels ranged from 3.9g/dl to 11.4g/dl (Median : 7.5 g/dl). Total leucocyte count ranged from $0.2 \times 10^3/\mu\text{l}$ to $192.5 \times 10^3/\mu\text{l}$ (Median : $35 \times 10^3/\mu\text{l}$). Platelet count ranged from 6000 to 397000 / μL (Median : 40000/ μl). Blasts in peripheral blood ranged from 2% to 92%. Flow cytometry was done on peripheral blood/bone marrow aspirate sample. Immunophenotyping showed ETP-ALL profile in 26 cases and Near ETP-ALL profile in 3 cases. Follow up post induction (BFM-95 protocol) MRD data was available in 14 cases of which 7 cases had a positive MRD (7/14, 50%). Serial follow up data would be presented in detail.

Conclusion: Identification of ETP-ALL is important for their therapeutic and prognostic connotations.

Abbreviations: ETP-ALL, MRD