Understanding and Clinical Approach to Early T-cell Precursor Acute Lymphoblastic Leukemia (ETP-ALL)

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Early T-cell precursor acute lymphoblastic leukemia (ETP-ALL) is a special subtype of T-cell acute lymphoblastic leukemia (T-ALL) which accounts for 10% to 15% of T-ALL cases. In 2009, ETP-ALL was initially defined by its immunophenotype; the absence of CD8 and CD1a, weak or absent CD5 expression, and the expression of at least one myeloid and/or stem cell marker. More recently, Near ETP-ALL has been introduced to describe cases that meet these criteria but exhibit higher CD5 levels.

Early studies reported inferior treatment outcomes for ETP-ALL compared to non-ETP T-ALL, thus intensive treatment with hematopoietic stem cell transplantation had been recommended. However, recent studies reported non-inferiority of ETP-ALL with uniform treatment.

Nevertheless, ETP-ALL has unique clinical characteristics; Minimal residual disease assessment by next-generation sequencing frequently fails to identify underlying clonality, and high proportion of induction failure is reported in ETP-ALL. Recently, there has been a growing emphasis on genomic-based risk stratification of T-ALL to guide personalized therapeutic interventions.

This session reviews current updates on the biology of ETP-ALL and recent therapeutic approaches.