

CD3⁺CD4⁺CD8⁻ T CELLS IN PEDIATRIC LEUKEMIA

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Background: Acute lymphoblastic leukemia (ALL) is the most common malignancy in children [1]. The treatment of relapsed or refractory ALL is associated with severe toxicity, and there is a need for accurate and clinically useful biomarkers to predict risk of recurrence and overall outcome [2, 3]. We hypothesize that CD3⁺CD4⁺CD8⁻ T (DNT) cells could potentially serve as predictive biomarkers to better understand patient prognosis and offer risk-adapted therapy.

Materials and methods: 74 children with ALL aged 2-18 and 96 age and gender-matched healthy controls participated in this single-center, cross-sectional study. The patients were stratified according to disease outcome (relapse, remission) and risk group (standard, intermediate, or high risk). Flow cytometry was used to quantify DNT cells in the peripheral blood of study participants. Statistical analysis was performed using the Mann-Whitney U test and the Kruskal-Wallis test.

Results: High-risk patients had the lowest number of DNT cell count (30 [19; 76] x10⁶/L), followed by intermediate-risk (53 [35; 76] x10⁶/L) and standard-risk (63 [41;82] x10⁶/L) patients, $p < 0.0001$. In comparison, the control group had the highest absolute number of DNT cells (133 [94; 190] x10⁶/L). Patients with relapse (39 [12; 82] x10⁶/L) and in remission (53 [30; 76] x10⁶/L) had significantly lower counts of DNT cells compared to the control group (133 [94; 190] x10⁶/L), $p < 0.0001$.

Conclusion: Our findings suggest that low

counts of DNT cells are potentially associated with poor prognosis in children with ALL. Additional studies are needed to further confirm our finding and its immunological significance, and to elucidate the potential role of DNT cells in ALL.

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Key words: acute lymphoblastic leukemia, double-negative T cells, flow cytometry

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