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Original Article

# B-cell Lineage Study in Patients with Juvenile Idiopathic Arthritis

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## Abstract:

***Objective:*** Juvenile idiopathic arthritis (JIA) is the most common rheumatic disease in children. The exact causes of disease are still poorly understood. It seems that B cells have several functions in JIA, including production of autoantibodies, antigen presentation, production of cytokines, and activation of T cells. Here, we aimed to evaluate B-cell lineage and its precursors in the bone marrow of patients with JIA.

***Methods:*** Twenty consecutive patients with JIA were enrolled in this study. JIA is subdivided into three groups of Pauciarticular, Polyarticular, and Systemic JIA. Bone marrow mononuclear cells were separated. Then we analyzed the immunophenotype of the JIA patients by flow cytometry. After separation, the mononuclear cells were stained specific for B cell lineage [CD10, CD19 and CD20], T cell lineage [CD3] and non specific lineage [CD34, HLA-DR and TdT].

***Findings:*** Flow cytometric study of bone marrow showed that JIA patients had low level of CD10, CD19, and CD20. Polyarticular patients had lower level of D10, CD19, and CD20 than pauciarticular JIA patients and systemic onset JIA patients had lower levels than both of them.

***Conclusion:*** Decreasing of B cell precursor in bone marrow is one of mechanisms for pathogenesis of JIA and the more decreased B cell precursors in bone marrow are, the worst severity of the disease is. Significant differences in CD10 content of bone marrow were detected between the polyarticular and pauciarticular groups. So, it seems that polyarticular JIA patients had lower percentage of pre B cell stage.

## Keywords:

B-cell Lineage ، Immunophenotyping ، Juvenile idiopathic arthritis ، Chronic Arthritis

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