



# Regulatory B cells (CD19+CD38hiCD24hi) in alloimmunized and non-alloimmunized children with $\beta$ -thalassemia major

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## Abstract:

$\beta$ -Thalassemia major (BTM) is considered the most common hemoglobinopathy in Egypt and is one of the major health problems in our locality. Materials & methods: We investigated the frequency of B-regulatory cells (CD19+CD38hiCD24hi); (Bregs) among polytransfused alloimmunized and non-alloimmunized children with BTM. The study included 110 polytransfused pediatric patients with  $\beta$ -thalassemia major. Clinical and transfusion records of all studied patients were reviewed. Indirect antiglobulin test was performed to detect the presence of alloantibodies. We used flow cytometry for detection of CD19+CD38hiCD24hi regulatory B cells. Results: Alloimmunization was detected in 35.5% of thalassemic patients (39/110). The analysis of our data showed a significantly higher frequency of Bregs (CD19+CD38hiCD24hi) in the peripheral blood of both alloimmunized and non-alloimmunized patients as compared to healthy controls. Conclusions: Our data showed that the frequencies of CD19+CD24hiCD38hi Bregs cells were significantly increased in children with BTM. Our data suggested that Bregs cells could play a role in the clinical course of BTM. The relationship of Bregs to immune disorders in BTM children remains to be determined. Further longitudinal study with a larger sample size is warranted to explore the mechanisms of Breg cells in the disease process in BTM patients.

## Keywords:

Alloantibodies  $\beta$ -Thalassemia major Regulatory B cells

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