EVALUATION OF REGULATORY T CELLS IN CORD BLOOD AND IN ADULTS

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Aim: Immune tolerance is of critical importance for the development of pregnancy and control of autoimmunity, the prevention of transplant rejection and reduction of the strength of immune reaction against infectious pathogens. Regulatory T cells (Tregs) are shown to play a very important role in this process. The aim of our study is to analyze Tregs population in cord blood (CB) in comparison to peripheral blood (PB).

Materials and methods: Peripheral blood mononuclear cells (PBMCs) from 10 cord blood samples and from 14 healthy adult individuals were analyzed by flowcytometry.

Results: Our results demonstrated that the proportion of Treg ($FoxP3^+CD4^+$) cells in CB is similar to those in PB. Like in peripheral blood, CB Treg population consisted of $CD45RA^+$ and $CD45RA^-$ cells. Conversely to PB, in CB around 60% of Tregs were with naïve (CD45RA+) and 40% with memory (CD45RA-) phenotype. The analysis of CD25 expression demonstrated that only in CB almost all Tregs are CD25-positive, while in adults they declined with age.

Conclusions: It may be concluded that although the proportion of Tregs is stable in cord and peripheral blood, the profile differs significantly with regard to both CD45RA and CD25. Probably this is a consequence of proliferation, either homeostatic or antigen-driven. Our results contribute to the better understanding of the maturation and age-related changes in the subset of regulatory T cells.

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