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## Peculiarities of cell-mediated immunity in infants with retinopathy of prematurity

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**Purpose:** The goal of the present work was initiated to study the role of regulatory T cells (Tregs) CD<sup>4+</sup>CD<sup>25+</sup>Foxp<sup>3+</sup>CD127<sup>low</sup> in autoimmune disorders retinopathy (RP) in various stages of prematurely born kids.

**Materials and Methods:** The estimation of immunophenotype including Treg numbers in groups of mature donors (28), healthy mature and prematurely born kids with RP were compared. In total, 27 mature kids in age between 1,5 month to one year and 60 kids with RP from III+ to V active stages in age of 1,5 month to one year were studied in gestational ages from 25 to 32 weeks.

**Results:** Comparison of the immunophenotype of healthy donor and mature born kids revealed to decreasing of numbers of CD<sup>19+</sup> B cells. Opposite, patients with RP have shown decreased numbers of CD<sup>3+</sup>, CD<sup>4+</sup>, CD<sup>4+</sup>CD<sup>25+</sup>Fox<sup>p3+</sup>CD127<sup>low</sup> T cells and elevated numbers of CD<sup>19+</sup> B cells. There were no statistically reliable differences on immunological indicators when comparing children from 1 to 3 months, from 3.5 to 6 months and from 6.5 months to 1 year. Increased symptoms of the disease were followed by increase of B cells (CD19) numbers and statistically reliable decrease of regulatory T cells (p<0,05), decrease of CD<sup>4+</sup> and natural killer cells (CD<sup>3+</sup>/CD<sup>16+</sup>CD<sup>56+</sup>). Evidently, expanded *ex vivo* autologous Tregs could be used for RP therapy.

**Conclusion:** Prematurely born kids with retinopathy demonstrated decreased numbers of peripheral regulatory T cells CD<sup>4+</sup>CD<sup>25+</sup>Fox<sup>p3+</sup>CD127<sup>low</sup> (Tregs). Tregs play a crucial role in the development of autoimmune diseases, and they can be a cause of complications in retinopathy. The results demonstrate reverse correlations between severe stages of retinopathy in premature born babies and low numbers of regulatory T cells CD<sup>4+</sup>CD<sup>25+</sup>Fox<sup>p3+</sup>CD127<sup>low</sup> as well as CD<sup>4+</sup> and NK cells.

**Keywords:** Retinopathy of prematurity, cellular immunity, T-regulators, B-cells, immunosuppression, auto-immunity.

### Biography

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