

THE INFLUENCE OF VITAMIN D AND COTININE ON T-REGULATORY (TREG) CELLS AND ON THE COURSE OF ASTHMA IN CHILDREN

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Background. Asthma is one of the most common chronic respiratory disease in children. Understanding the immune mechanisms of epigenetic factors may contribute to the better control of asthma.

Aim of the study. The aim of this study was to analyze the effect of vitamin D and cotinine on severity of asthma, Treg and other immune parameters (CD3, CD4, CD8, CD19, CD16/56, anti-CD3 HLA-DR3).

Material and Methods. The study involved 25 children with asthma. Disease severity was assessed with the Asthma Control Test, spirometry and concentration of nitric oxide in exhaled air (eNO). The control group consisted of 15 healthy children.

Results. In children with asthma has been found significantly lower percentage of Treg in serum compared with the control group ($p < 0.002$). There were no significant differences in other immunological parameters. The study showed no correlation between vitamin D, cotinine and the course of asthma, Treg and other immune parameters. The results of the analysis indicate the presence of statistically significant positive correlation between the percentage of Treg and eNO ($p < 0.02$).

Conclusions. The results confirmed the role of regulatory Treg in the pathogenesis of asthma. Effects of vitamin D and cotinine on the severity of the disease has not been proven.