

T-LYMPHOCYTES PROFILE IN CHILDREN WITH ASTHMA

P. Shahid¹, P. Perenovska¹, V. Papochieva¹, D. Miteva¹, N. Gesheva², S. Lesichkova², E. Naumova²,
G. Petrova¹

¹*Pediatric Clinic, University Hospital "Alexandrovskia", Medical University, Sofia, Bulgaria*

²*Clinic of Clinical Immunology and Stem cell bank, University Hospital "Alexandrovskia", Medical University, Sofia, Bulgaria*

Aim: Asthma is a chronic heterogeneous disease involving endotypically distinct inflammatory pathways with T cells playing important roles in it. We assessed different T lymphocyte subsets in asthmatic children in an attempt to identify associations between these and their phenotypic characteristics.

Materials and methods: In this cross-sectional study we included 35 children, 18 boys, aged between 2 and 16 years, with asthma severity ranging from mild to severe. After obtaining written informed consent from their guardians, we withdrew blood samples for evaluation of total (CD3+), suppressor/cytotoxic (CD3+CD8+) and helper/inducer (CD3+4+) T-cell subsets.

Results: The results indicated aberration of total T cells in 18 children (51%), of the suppressor/cytotoxic T cells in 27 children (77%) and of the helper/inducer T-cells in 19 children (54%). Regression analysis showed a tendency for boys to have lower total T cells and helper/inducer T-cells, but higher levels of suppressor/cytotoxic T cells. In 13 children with total T lymphocytes within the reference range we found evidence of impaired immunobiological balance.

Conclusions: The airway inflammation observed in our cohort of asthmatic children may be a consequence of impaired balance of their T-cell subsets. Such aberrations could possibly explain the frequent asthma exacerbations due to infections in the pediatric age.