

O0122 **Diagnostic markers of allergic bronchopulmonary aspergillosis in patients with asthma**

Yana Kozlova<sup>2</sup>, Ekaterina Frolova<sup>1</sup>, Larisa Filippova<sup>1</sup>, Alexandra Uchevatkina<sup>1</sup>, Oleg Aak<sup>1</sup>, Valeriy Kuznetsov<sup>2</sup>, Ekaterina Burygina<sup>2</sup>, Nikolai Klimko<sup>\*2</sup>

<sup>1</sup>North-Western State Medical University named after I.I. Mechnikov, Kashkin Research Institute of Medical Mycology, <sup>2</sup>North-Western State Medical University named after I.I. Mechnikov, Department of clinical mycology, allergology and immunology

**Background:** The study of the role of different immunological mediators in the formation of chronic allergic inflammation in patients with allergic bronchopulmonary aspergillosis (ABPA) is necessary for early diagnosis of the disease and identification of potential targets for therapeutic intervention.

**Materials/methods:** The study involved 13 patients with ABPA, 14 patients with severe asthma with fungal sensitization (SAFS), 17 patients with asthma, and 12 healthy individuals. Levels of thymic stromal lymphopoietin (TSLP), thymus and activation-regulated chemokine (TARC), IL-8, number of eosinophils, levels of total IgE and specific IgE to *Aspergillus fumigatus* (*A.fumigatus*) were determined in the serum by enzyme immunoassays. The monitoring of immunological markers in the background of antifungal therapy was done.

**Results:** Significantly higher values of the number of eosinophils, levels of total IgE and sIgE for *A.fumigatus*, as well as TARC and IL-8 in serum were identified in patients with ABPA in comparison with patients with asthma. There were no differences in the TSLP content between the examined groups of patients. A positive correlation of the sIgE level to *A.fumigatus* with content of TARC and IL-8, the number of eosinophils, and total IgE level confirms the important diagnostic value of proinflammatory cytokines in patients with ABPA. Positive clinical and immunological dynamics in ABPA patients treated with itraconazole were revealed. After 12 weeks of therapy a significant increase of the AST, FEV1 and FEV1/FVC ratio, a decrease of the number of eosinophils, levels of total IgE and a trend towards a decrease in TARC and IL-8 were established. This indicates the effectiveness of antifungal drugs in the treatment of chronic allergic inflammation in patients with ABPA.

**Conclusions:** The use of modern immunological biomarkers, alongside with traditional indicators, will allow to differentially evaluate the probability of developing of ABPA in patients with asthma, evidently distinguish the early stages of the disease and conclude about the effectiveness of the therapy.