# DIFFERENCES IN THE IMMUNOLOGICAL STATUS OF PATIENTS WITH PULMONARY TUBERCULOSIS IN THE DEVELOPMENT OF ALLERGIC AND TOXIC-ALLERGIC ADVERSE REACTIONS DURING TREATMENT WITH ANTI-TUBERCULOSIS DRUGS

**Yu. O. Matvienko, O. M. Rekalova, O. R. Panasyukova, V. M. Zhadan, S. G. Yasir, A. V. Taranenko, M. P. Budyonna**
*State Organization «Yanovsky National Institute of Phthisiology and Pulmonology NAMS of Ukraine», Kyiv, Ukraine*

***Abstract. The aim of the study:*** to establish differences in the immunological status of patients with pulmonary tuberculosis (TB) in the development of allergic and toxico-allergic adverse reactions during treatment with anti-tuberculosis drugs.
***Materials and methods of research.*** An analysis of the examination data of 68 patients with pulmonary TB who underwent inpatient treatment at the State Organization «Yanovsky National Institute of Phthisiology and Pulmonology NAMS of Ukraine». The mean age of patients was (38.2 ± 1.8) years (19 to 76 years). At the beginning of inpatient treatment in the clinic all patients underwent a complex examination: clinical, radiological, laboratory (general blood and urine tests, with blood levels of bilirubin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), gamma-glutamyl transpeptidase (GGT), alkaline phosphatase (ALP), urea, creatinine, glucose), microbiological, immunological (determination of serum tryptase level, total IgE level, lymphocyte migration inhibition (LMI) reaction and assessment of erythrocyte sedimentation rate (ERS) to first-line antitubercular drugs (ATD) (rifampicin, isoniazid and ethambutol)).
***Conclusions.*** The study revealed a significant difference between a number of immunological parameters in patients with pulmonary TB in the development of allergic and toxic-allergic reactions to ATD. The presence of clinical signs of allergy to ATD in patients with TB causes the formation of: elevated serum levels of tryptase and IgE, which indicates the activation of mast cells and basophils under the influence of ATD; significantly higher frequency of positive reactions of ERS (to isoniazid and ethambutol) and LMI (to isoniazid) — which reflects the state of sensitization to ATD. The immune status of patients with TB with allergic manifestations to ATD (without toxic reactions) differs from that in patients with toxic-allergic reactions with more pronounced laboratory signs of immediate hypersensitivity reactions to ATD. Immunological reactions in patients with TB with toxic-allergic reactions have a number of differences that are not typical for patients of group 1 with allergies: significantly lower lymphocyte sensitization in patients with ATD (only to isoniazid in LIM), lack of correlation of IgE serum levels with tryptase levels — indicating the genesis of other mechanisms of hypersensitivity to ATD (possibly pseudoallergic) in such patients. The formation of toxic-allergic manifestations of intolerance to ATD is influenced mainly by liver dysfunction, which indicates a leading toxic effect of ATD in such patients.

***Key words:*** allergic reactions, immunological parameters, cellular hypersensitivity, anti-tuberculosis drugs, toxic-allergic reactions, pulmonary tuberculosis.