ERYTHROCYTE SEDIMENTATION REACTION AS A MARKER OF IMMUNE-MEDIATED DISORDERS AFTER CORONAVIRUS INFECTION IN PATIENTS WITH PULMONARY TUBERCULOSIS

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Abstract. The aim is to construct and research the potential use of a model of positive and negative erythrocyte sedimentation reaction (ESR) reactions to determine the impact of the COVID-19 pandemic on the immune system of patients with pulmonary tuberculosis (TB).

Research methods and materials. The research utilized retrospective data from examinations of 68 patients with pulmonary TB aged 19 to 76 years during the period from 2018 to 2020, who were undergoing treatment at the NSC PhPA NAMSU. For specific laboratory diagnosis of increased sensitivity of TB patients to anti-tuberculosis drugs (ATDs), the ESR of the patient's venous blood with ATDs was assessed. The mathematical processing of the research results was conducted using the "Minitab 21" software with built-in statistical libraries.

Results. In TB patients after recovering from COVID-19, the decrease of allergic activation of immunocompetent cells was observed in ESR laboratory tests with first-line ATDs. A reduction in the number of both mildly positive reactions of the first stage and positive reactions of the second and, especially, third stage was demonstrated during the peak period of COVID-19 in 2020 compared to the pre-COVID period of 2018–2019 ($p<0.01$), indicating changes in the immune system reactivity of TB patients who had undergone viral infection.

Conclusions. The ESR model confirmed that SARS-CoV-2 has a long-term impact on the immune system of TB patients, leading to its exhaustion and anergy.

Keywords. Tuberculosis, COVID-19, immune system, erythrocyte sedimentation reaction.