Features of immune status in patients with pulmonary tuberculosis after the COVID-19

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BACKGROUND. Identification of immunological changes in patients with pulmonary tuberculosis after coronavirus infection will contribute to the prediction of its course and correction of therapeutic protocols.
OBJECTIVE. The aim of the work is to determine the nature of immuno-mediated disorders caused by coronavirus disease (COVID-19) in patients with pulmonary sensitive tuberculosis (STB).
MATERIALS AND METHODS. The results of a comprehensive immunological clinical and laboratory examination with subsequent computer processing of the data of 72 patients with STB of the lungs were analyzed.
RESULTS. In the immune system of patients with pulmonary STB after COVID-19 the multidirectional changes are manifested by: a lower degree of increase of the blood leukocytes number (mainly due to a decrease in the absolute lymphocytes number), activation of the immune T-cells with an increase in the percent number and functional activity of pan-T-cells and T-helpers, an increase in the functional activity of T-suppressors, natural killers and killer T-cells (with the absolute and percent decrease of the latter), a higher level of the absolute and relative number of double positive ($CD4^+8^+$) cells and the functional activity of B-cells. A decrease in the level of IgA and an increase in the concentration of IgG with an decrease in the level of the medium and small circulating immune complexes, depression of the phagocytes link of immunity by reducing phagocyte number of phagocytes are observed in the blood of the patients with pulmonary STB after COVID-19.

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CONCLUSIONS. In the patients with pulmonary tuberculosis after COVID-19, the immune response is complex, with the crossing of immune reactions of pulmonary tuberculosis and post-COVID changes in immunity: on the one hand, previous COVID-19 promote compensatory activation of immune cells – T- and B-lymphocytes, natural killers; on the other hand, it causes suppression of antibacterial protection of mucous membranes (due to a decrease in the blood level of IgA) and reduces the body's resistance (due to suppression of the phagocytes link of immunity).

KEY WORDS: immunity, COVID-19, pulmonary tuberculosis.