**Abstract**

We studied the role of cytotoxic components (DAMPs) formed in the body of patients with COVID-19 in ensuring the long-term preservation of post-COVID-19 manifestations and the possibility of creating an experimental model by transferring DAMPs to rats. In patients with post-COVID-19 syndrome (PCS) 2 months after SARS-CoV-2 infection we determined the presence of cytotoxic components in the blood serum (Terasaki test, *Dunaliella viridis* test and content of DAMPs). In post-COVID-19 syndrome patients with a high content of serum cytotoxic oligopeptide fraction (selective group, n = 16) we determined the number of leukocytes, lymphocytes, neutrophil granulocytes and monocytes in the blood, the content of C-reactive protein (CRP), the concentration of C3 and C4 complement components and circulating immune complexes, the serum content of IL-6, IL −10, IL-18, TNF-α, phagocytic activity of neutrophils, presence of neutrophil traps and autoantibodies ANA.

It has been shown that in patients with PCS, there are components with cytotoxicity in the blood serum, form specific immunopathological patterns, which are characterized by: an increased content of CRP, complement system components C3 and C4 and cytokines (TNF-α, IL-6, IL-10, IL-18) activation, the formation of a wide range of autoantibodies ANA, the low efficiency of endocytosis in oxygen-independent phagocytosis; their phagocytic activity reaches its functional limit, and against this background, activation of neutrophil traps occurs, which can contribute to further induction of DAMPs. This self-sustaining cell-killing activation provided long-term preservation of PCS symptoms.

The transfer of blood serum components from selective group patients with PCS to rats was accompanied by the appearance of cytotoxic components in them which induced sensitization and immunopathological reactions. Preventive administration of a biologically active substance with polyfunctional properties MF to experimental animals “corrected” the initial functional state of the body's immune-metabolic system and eliminated or facilitated immuno-inflammatory reactions.