

## **THE CYTOKINE STORM- LONG KNOWN AND RELEVANT AGAIN**

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The cytokine storm is a condition in which the immune system, instead of providing protection to the body, gets out of control and damages it. The concentration of pro-inflammatory cytokines, secreted by the effector cells of the immune system, increases hundreds of times and leads to severe systemic inflammation with damage to many organs and systems, which can lead to failure of multiple organs. The causes of cytokine storm are infections, autoimmune diseases and some types of immunotherapy.

The COVID 19 pandemic has focused the attention back to this type of immunopathology. The cytokine storm, rather than the cytopathogenic action of the virus, has proven to be a major cause of damage (especially to the lungs) in some of the patients, infected with the coronavirus.

Acute-phase proteins, inflammatory markers, and proinflammatory cytokines are tested to diagnose and monitor the cytokine storm. The methods, applied for storm treatment, are immunosuppression with corticosteroids, extracorporeal clearance of monoclonal antibodies - CD28 agonists (in case of iatrogenic cytokine storm), inhibitors of IL-6 and IL-1.