TRANSFUSION THERAPY OF PATIENTS WITH COVID-19 WITH RECONVALCENT PLASMA

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The use of convalescent plasma in the treatment of infectious diseases has a long history during pandemics in different periods - Spanish influenza A (H1N1), severe acute respiratory syndrome (SARS), influenza A (H1N1), avian influenza A (H5N1), hemorrhagic fevers such as Ebola and others. Coronaviruses have appeared that cause deadly viral pneumonias - MERS-CoV, SARS-CoV and SARS-CoV-2. SARS-CoV-2, which causes COVID-19, emerged in late 2019 and caused an unprecedented pandemic.

While the development of SARS-CoV-2 vaccines to be tested and safely administered, or the isolation of antiviral monoclonal antibodies, is expected, the transfusion of convalescent plasma from COVID-19-recovered individuals is an urgent therapeutic alternative to passive immunization.

Post-transfusion studies have shown the presence of plasma antibodies that can limit the reproduction of viruses in the acute phase of infection by blocking the entry of the virus by preventing the binding of coronavirus S protein to the patient's cellular receptors and helping to eliminate the virus, which is beneficial. for rapid recovery from the disease.

During the period December 2019 - April 2020, numerous clinical trials were conducted on COVID-19 patients transfused with convalescent plasma. The published results include: clinical outcomes, hospital stays during transfusion, transfused plasma doses and regimens, survival, recovery, mortality, viral load, viral antibody titers, and adverse events.

FDA has approved a protocol for the use of convalescent plasma for the treatment of critically ill patients with COVID-19, published on March 26, 2020. Plasma should be from convalescent patients who can donate blood, have had no symptoms for 14 days and are with negative results in the COVID-19 tests. According to the FDA, convalescent plasma should be provided urgently and transfused to patients with serious or imminent life-threatening COVID-19 infection.

As a result of convalescent plasma transfusions, a significant reduction in viral load (to negative between 1 and 30 days after transfusion), an increase in IgG and IgM neutralizing antibody titers were observed. Clinically, almost all patients show general improvement in symptoms, normalization of temperature, varying degrees of reduction of lung lesions, resolution of ARDS, exclusion from ventilation within 1 day to a maximum of 35 days after transfusion. No mortality or severe adverse reactions or complications have been reported in transfused patients.