**Plasmapheresis, Intravenous Immunoglobin Show Promise as Early Treatment for COVID-19**

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Plasmapheresis and intravenous immunoglobulin (IVIG) have been reported to be effective empirical therapeutic options to control COVID-19 infection. A metanalysis published in SN Comprehensive Clinical Medicine found that administering the therapies early in a patient’s treatment could be associated with better outcomes.

Plasmapheresis, the process of separating the plasma from blood cells, has been used in the treatment of multiple diseases, including myasthenia gravis, Guillain-Barre syndrome, and thrombotic microangiopathy. The process can remove a number of pathologic factors, including autoantibodies, complement products, lipoprotein, immune complexes, cryoglobulin, myeloma protein, ADAMTS-13, protein-bound toxins, cell platelets, and white blood cells.

The process has limited adverse effects, including a fall in arterial blood pressure, arrhythmias, sensation of cold with elevated temperature, and paresthesia, all of which can be mitigated and responded to if the patient is closely monitored in a health care setting, according to the study.

IVIG is a therapeutic choice for patients with antibody deficiencies and has been used in the treatment of a wide range of conditions, including heart failure, mycobacterial infection, adult respiratory distress syndrome, and Alzheimer disease. Currently, IVIG is used to stem the outbreak of viral diseases such as influenza, poliomyelitis, mumps, and measles.

Initial reports have shown promising results for the use of IVIG in the treatment of COVID-19. Known complications are associated with other infectious diseases during transferring of blood substances or reaction to serum constituents, such as serum sickness, according to the study.

Reports have shown that patients with COVID-19 admitted to the ICU have significantly higher levels of cytokines and chemokine in their blood. The cytokine storm, defined as a decrease in blood oxygenation, declined lymphocyte count over time, increased serum enzymes, elevated creatinine levels, and high levels of CRP, is understood to play a critical role in the pathophysiology of COVID-19 in critically ill patients.

Several case reports have shown favorable results for using plasmapheresis and IVIG to prevent patients’ conditions from worsening and recovering their lymphocyte count, indicating plasmapheresis and IVIG should be promptly administered to COVID-19 patients in order to have the highest efficacy in their treatment, according to the study.

Clinical observation has shown that COVID-19 has 3 phases in symptomatic cases: a starting phase with subsequent viremia, an accelerating phase that is the vital phase of the infection, and a recovery phase with progressive lymphocytopenia and elevated inflammatory markers. Multiple studies have shown that administration of IVIG and plasmapheresis before day 14 of the illness could be associated with better outcomes, which may be due to the fact that viremia develops within the first week of infection, according to the study.

As a result, the primary immune response first appears in the blood by day 10–14 and followed by viral clearance, according to the researchers. The study theorizes that convalescent plasma could be most effective if administered in the early stages of infection in order to minimize the patient’s clinical deterioration.

Research indicates that in COVID-19, IVIG can be used both prophylactically and in the treatment of the disease. The therapy has been shown to help prevent infection in individuals such as health care workers or patients who are at increased risk of disseminated infection.

Further controlled clinical trials are being conducted to confirm the efficacy of using IVIG as a treatment for COVID-19. The investigators conclude plasmapheresis and IVIG are now the favorable options for prevention and treatment of COVID-19 cases that can be rapidly available and has low adverse effects and risks.

**REFERENCE:**

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