Category :**Renal: extracorporeal support**

A70 - ***Clinical course and outcomes of critically ill covid-19 patients after hemoperfusion in combination with standard therapy***

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Introduction:

Cytokine release syndrome is associated with multiple organ dysfunction in COVID-19 infection. Implementing extracorporeal blood purification could be benefit in omitting inflammatory mediators and supporting organ systems. We aims to investigate the effectiveness of hemoperfusion in combination with standard therapy in critically ill COVID-19 patients and examine factors associated with in-hospital mortality.

Methods:

The observational study included critically ill COVID-19 patients on HA-330 hemoperfusion (Jafron Biomedical Co, Ltd). Clinical and laboratory findings were monitored after hemoperfusion. Factors associated with death after hemoperfusion were also examined.

Results:

Fifty-five patients with COVID-19 pneumonia on hemoperfusion were analyzed. A total of 43 patients (78.2%) received mechanical ventilation and in-hospital mortality was 58.2%. Overall, mean Sequential Organ Function Assessment (SOFA) score was 8.56$\pm$3.62. The hemoperfusion resulted in a significant increase in the PaO_2/FiO_2, white blood cell count and a significant decrease in the hsCRP and platelet counts of patients. Multi-factor Cox analysis showed increasing odds of in-hospital death associated with older age (HR 1.08, 95%CI 1.02-1.14), high body mass index (HR 1.16, 95%CI 1.07-1.26), high serum LDH level (HR 1.01, 95%CI 1.01-1.02), and high SOFA score (HR 1.26, 95%CI 1.02-1.55). Additionally, changes in patient profiles after hemoperfusion including increase in white blood cell count of >60%, serum creatinine of >20%, serum ferritin of >50%, SOFA score of >40%, norepinephrine dosage of >25% and PaO_2/FiO_2 of <50% was associated with increased risk of death.

Conclusion:

In this study of patients with severe COVID-19, hemoperfusion therapy improve respiratory distress and cell response, and decreased inflammatory mediators. Aging, obesity, worsening in inflammatory response, renal function and no critical improving oxygenation were associated with in-hospital mortality.