ECRONICON OPEN ACCESS

EC PULMONOLOGY AND RESPIRATORY MEDICINE

Editorial

Treating COVID-19-Induced Severe Acute Viral Pneumonia and COVID-19-Induced Acute Respiratory Distress Syndrome with High-Dose Intravenous Immunoglobulins

Attapon Cheepsattayakorn[1,3]* Ruangrong Cheepsattayakorn[2] and Porntep Siriwanarangsun[3]

[1]10th Zonal Tuberculosis and Chest Disease Center, Chiang Mai, Thailand

[2]Department of Pathology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

[3]Faculty of Medicine, Western University, Pathumtani Province, Thailand

***Corresponding Author:** Attapon Cheepsattayakorn, 10th Zonal Tuberculosis and Chest Disease Center, Chiang Mai, Thailand.

Received: November 16, 2021; **Published:** November 26, 2021

Intravenous immunoglobulin (IVIG), a blood preparation consisting of IgG and small amounts of IgA and IgM is concentrated and isolated from healthy donors [1]. A correlation between prognosis of severe illness of COVID-19 and severity of the cytokine storm, a form of systemic inflammatory response common to severe acute viral pneumonias has been observed [2]. Clearance of viral particles and immune protection are due to viruses-induced physiological cytokine and chemokine response involving lymphocytes, natural killer cells, dendritic cells, mononuclear macrophages, and endothelial cells [3]. A recent study in Qatar among 590 COVID-19 patients, 190 received IVIG treatment in addition to routine care, and 400 received routine care. Incidence of acute kidney injury was significant higher in the IVIG group (85.6% vs. 67.8%; $p = 0.001$), and ICU-free days and ventilator-free days at day-28 were lower ($p < 0.001$ for both) [4].

The overall ICU mortality was 27.1%, and was 25.8% in the matched cohort [4], whereas among IVIG-treated group revealed higher mortality (36.4% vs. 15.3%; sHR: 3.5; 95% CI: 1.98 - 6.19; $p < .001$) [4]. Nevertheless, another recent study by meta-analysis included 4 clinical trials, 3 cohort studies, and 825 hospitalized COVID-19 patients demonstrated that IVIG could decrease the mortality in critical subgroup, compared to the control group [5]. No significant difference in the non-severe or severe subgroups, whereas the efficacy of IVIG was associated with the severity of COVID-19 [5].

In conclusion, the association between the COVID-19 severity and the IVIG efficacy could be possible. Well-designed randomized clinical trials are urgently needed to identify both positive and negative effects of IVIG on COVID-19 severity.

Bibliography

1. Kerr J., *et al.* "Is dosing of therapeutic immunoglobulins optimal ? A review of a three-decade long debate in Europe". *Frontiers in Immunology* 5 (2014): 629.

2. Vaninov N. "In the eye of the COVID-19 cytokine storm". *Nature Reviews Immunology* 20 (2020): 277.

3. Liu X., *et al*. "High-dose intravenous immunoglobulins in the treatment of severe acute viral pneumonia : the known mechanisms and clinical effects". *Frontiers in Immunology* 11 (2020): 1660.

4. Ali HS., *et al.* "Clinical outcomes of intravenous immunoglobulin therapy in COVID-19 related acute respiratory distress syndrome: a retrospective cohort study". *BMC Pulmonary Medicine* 21 (2021): 354.

5. Xiang H-R., *et al.* "Efficacy of IVIG (intravenous immunoglobulin) for corona virus disease 2019 (COVID-19) : a meta-analysis". *International Immunopharmacology* 96 (2021): 107732.

Volume 10 Issue 12 December 2021