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Editorial – High dose intravenous immunoglobulins as a therapeutic option for COVID-19 patients

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Zhao et al[1] reported the first case of a COVID-19 patient with a clinical presentation typical of Guillain-Barré Syndrome. Also, there is increasing evidence that patients with COVID-19 pneumonia experience pulmonary embolism accompanied by diffuse intravascular coagulation (DIC)[2]. Moreover, Zheng et al[3] proposed for patients with COVID-19 a risk-adapted treatment strategy according to illness severity. Their approach includes, in severe cases, the early use of low-dose methylprednisolone, with significant clinical and imaging improvement. These are additional evidence that the Sars-Cov 2 infection could act as an explosive fuse triggering a cascade of inflammatory events that is difficult to control. According to this view, overall in elderly people with blunted immune competence, the virus overcomes the subject's immune response of the acute phase leading to a second, more severe and critical phase characterized by a storm of inflammatory cytokines and increases of D-Dimer levels[4].

High dose intravenous immunoglobulins (IVIg) from healthy donors are being safely used for decades not only to treat autoimmune diseases (e.g. Guillain Barrè Syndrome, in which they work sometimes as lifesavers within few days) but also in certain, difficult-to-treat, bacterial and viral infections[5]. Moreover, a role in improving coagulation abnormalities along with the hyperinflammatory state in septic patients has been recently reported[6]. A variety of mechanisms of action have been attributed to the beneficial effects of IVIg, including their interaction with T-cell function, antigen presenting cell maturation/presentation, combined with their capacity of "tuning down" inflammatory reactions[5]. Thus, these therapeutic properties of the IVIg seem particularly suitable for COVID-19 severe infection, where an off-targeted adaptive immune activation and inflammation with consequent coaugulation abnormalities, are all involved in the pathogenesis of the disease[4].

Interestingly, a few weeks before this paper was submitted, Cao et al[7] reported remission in 3 severe cases of COVID-19 after IVIg therapy and Ling et al[4] recommended the early initiation of high dose IVIg associated with anticoagulant treatment.

Thousands of people are dying every day because of COVID-19, and the number of deaths might become millions if an effective therapy will not be available soon. Thus, we hereby provide a rationale for testing in a clinical trial IVIg from healthy donors in severe cases of COVID-19 before the fatal multiple organ failure begins. Given the urgent need for therapies that can alleviate the global burden of the COVID-19 infection and death while waiting for a vaccine, we think it is imperative to widen therapeutic opportunities against this new and devasting pandemic.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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