

Convalescent plasma special series

Welcome to the latest special series of *Annals of Blood* dedicated to a very topical issue of COVID-19 pandemic, i.e., the use of convalescent plasma (CP) from recovered individuals as therapy for COVID-19 patients. As this subject is still controversial (1,2), I wanted to address it from a broad point of view, including the hypothesized mechanisms of action of CP, its use in other infectious diseases and in particular in COVID-19 clinical setting.

The series begins with a contribution from Al-Riyami (3). In this narrative review, the author analyzes the several proposed mechanisms of action of CP, which include direct neutralization and suppression of viremia, antibody-dependent cellular cytotoxicity, modification of inflammatory response, restoration of coagulation factors, immunomodulation of the hypercoagulable state and potential role of ABO naturally occurring iso-agglutinins. The investigator concludes, however, that, despite these hypothesized pathomechanisms, the efficacy of CP is driven by several other factors closely linked to donors, patients and disease characteristics which may influence the clinical response to CP. The series continues with a contribution from our group dedicated to a particularly interesting and critical topic: the use of CP during pregnancy complicated by COVID-19 (4). Grisolia and colleagues critically discuss the current literature evidence reporting also their personal experience and conclude that, although limited, the published reports support the safety and efficacy of CP use during pregnancy (4).

In the next article, a narrative review, I investigate the use of CP in previous severe infectious diseases, including Ebola virus, influenza virus and coronavirus infections and I conclude that these previous positive evidences have represented a solid rationale for the use of CP treatment during the current COVID-19 pandemic (5).

The series continues with the article by Liu and colleagues (6), who review and analyze the current therapeutic approaches for patients with COVID-19, especially in the application of blood transfusion-related technologies (i.e., CP and plasma exchange). After the examination of the available literature, the authors conclude that, although more studies are needed, such plasma-based should be considered a useful therapeutic solution in the treatment of severe COVID-19 patients.

Finally, the last article is presented by Siegfried and McCullough (7) and regards the use of CP in the United States, where it has received the emergency use authorization by the Food and Drug Administration (FDA) following the results of the national expanded access program. Critical issues for CP program include donor recruitment, donor screening at the collection site, plasma collection, testing plasma for potency, and the use of post-donation information from the donor. The most relevant problem regards, however, the close relationship between CP supply and demand, which depends on several factors difficult to predict and govern.

Well, at this point I just have to wish you good reading!

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