Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the editor

COVID-19 convalescent plasma therapy for immunodeficient patients–weighing up risks and benefits

Dear Editor,

We would like to use the opportunity to discuss some of the safety concerns of convalescent COVID-19 plasma, raised by Mungmunpuntipantip and Wiwanitkit in their letter [1]. We agree with the authors that risk-benefit analyses for the use of convalescent plasma are of great importance and contribute to the improvement of patient safety.

The decision to transfuse the patient is always a compromise between the expected benefits and the potential risks. Other alternatives should certainly be considered when making such a decision. Despite the growing number of clinical studies related to the use of convalescent COVID-19 plasma, evidence of its efficacy is still limited. Based on the data available, potential clinical benefit is associated with high-titer plasma administered to hospitalized patients early in the course of disease [2]. In addition, numerous studies have demonstrated the beneficial effect of this therapy in immunodeficient patients who cannot fight infection by producing their own antibodies [3,4]. In these patients, the benefit of passive immunotherapy outweighs the known risks of plasma transfusion. These risks are greatly reduced by routine use of different methods and procedures, including:

- donor selection aimed at excluding persons at risk from blood donation;
- the use of highly sensitive tests (serologic and NAT) in donor screening;
- pathogen reduction technologies that further reduce the risk of both known and emerging infections.

Due to the storage in a frozen state, plasma is the blood component with the lowest risk of bacterial contamination. The use of “male-only” plasma and/or testing for the presence of antileukocyte antibodies reduces the risk of TRALI (Transfusion-Related Acute Lung Injury).

There are other potential risks to consider, such as allergic/anaphylactic reactions and TACO (Transfusion Associated Cardiac Overload). Careful pre-transfusion assessment, patient monitoring and timely management of reactions are of paramount importance. Several studies have shown that the frequency of serious adverse reactions after administration of convalescent plasma is very small and similar to that after administration of standard plasma units [5]. However, further careful monitoring of convalescent plasma recipients is required, especially in relation to the theoretical risks of this specific therapy (antibody-dependent enhancement of SARS-CoV-2 infection, long-term immunosuppression, etc.).

The possibility of contamination of blood components with SARS-CoV-2 has been debated by several authors [6,7], since low viral load SARS-CoV-2 RNAemia has been frequently detected in blood of symptomatic patients [8] but also reported in asymptomatic blood donors [9]. However, data on successful isolation of infective virus for SARS-CoV-2 (as well as for SARS-CoV and MERS) from plasma are lacking. Therefore, it is not known whether infective virus could be present in serum or plasma, or RNA comes from disintegrated or inactivated viruses. As no case of SARS-CoV-2 transfusion transmission has been documented to date, testing of donated blood/blood components for SARS-CoV-2 is not recommended. Prevention of the theoretical risk of SARS-CoV-2 transfusion transmission is achieved by deferring potential donors who are at risk of being infected and post-donation information (PDI) management. Considering that convalescent COVID-19 plasma is donated by persons who have fully recovered from COVID-19 (including additional deferral period), and plasma contains the substantial amount of SARS-CoV-2 neutralizing antibodies, the possibility of transfusion transmission is not likely. Therefore, the implementation of pathogen reduction technology should only be considered in the context of reducing the infectious risk of transfusion treatment in general.

The amount of information related to COVID-19 is growing rapidly and we hope that the answers to the still numerous questions and dilemmas [10] will help to assess the current practice or create a new one.

Disclosure of interest

The authors declare that they have no competing interest.

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