

# Convalescent Plasma: Promise for COVID-19 Pandemic

Sir,

Severe acute respiratory syndrome coronavirus (SAR-CoV-2), which is the cause of coronavirus disease (COVID-19) pandemic, challenged scientific minds to search for new treatments. Suggested therapies are in rapid development with questionable efficacy. We proposed that human convalescent plasma is a viable option for prevention and treatment of COVID-19, where antibody will be given to a susceptible person as passive antibody therapy; and transferred immunoglobulin can confer protection from weeks to months. It has been used for Ebola virus outbreak in 2014 and Middle-east respiratory syndrome coronavirus in 2015,<sup>1</sup> SARS-CoV, H5N1 avian influenza, and H1N1 influenza. Many patients received single dose infusion in the past with remarkable improvement. Limited data from China, using convalescent plasma for COVID19 pandemic, has shown clinical benefit.<sup>2</sup> Four patients with COVID-19 received convalescent plasma, including a pregnant woman, and recovered; however, larger studies are required to investigate the efficacy of convalescent plasma therapy.<sup>3</sup>

A case series from JAMA suggested drastic improvement in clinical parameters.<sup>4</sup> One of the explanations was that antibodies will suppress viremia and limit infection rate. Five critically ill patients with COVID-19 were treated with anti SARS-CoV-2 antibodies and found with negative viral load. It was also suggested to give plasma in the early stages of disease. Limited published data showed no adverse events; hence, making it more worthy treatment option.

US Federal Drug Authority (FDA) announced a programme, which will be operated in collaboration with the American Red Cross and the National Blood Banking Community in the United States.<sup>5</sup> This programme will provide access to investigational convalescent plasma for patients across the nation in acute care facilities infected with SARS-CoV-2, the virus that causes COVID-19, exhibiting severe or life-threatening COVID-19; or those at high risk of progression to severe or life-threatening disease. The convalescent plasma access programmes, led by national initiative of physicians and investigators from 40 institutions in the United States, have self-organised to investigate the use of convalescent plasma in the current COVID-19 pandemic. These institutions are seeking to establish a national convalescent plasma programme to modify the course of disease. Plasma obtained from those who have recovered from COVID-19 will be given to the affected ones in a hope that they will recover faster. It is suggested as one of the treatments that scientists could propose. Protocols are under development. Safety data collection is under consideration to include serious adverse events, related to administration of convalescent plasma. Patients will be best matched with data gathering including demographics,

hospital stay, and survival to discharge. This approach will have the potential to protect populations and will give a way forward to study other investigational therapies.

We anticipate that recovered patients from COVID-19 will be assessed clinically, including viral nucleic acid screening. Necessary regulatory permissions should be in place. Donated sera will be pooled and used to treat individuals with early symptoms. If it is established, it could allow many healthcare workers to maintain their critical function. It could be used as a stopgap option amidst pandemic. However, it is needed to pace up the efforts by authorities to protect high risk individuals and consider its urgent preparation and the emergent use.

## CONFLICT OF INTEREST

Author declared no conflict of interest.

## AUTHORS' CONTRIBUTION

SS, MAB: Substantial contributions to the design of the work; drafting the work and revising it critically for important intellectual content; approved the final version to be published.

## REFERENCES

1. Zhang B, Liu S, Tan T, Huang W, Dong Y, Chen L, et al. Treatment with convalescent plasma for critically ill patients with SARS-CoV-infection. *Chest* 2020; S0012-3692(20)30571-7.
2. Bloch EM, Shoham S, Casadevall A, Sachais BS, Shaz B, Jeffrey L, et al. Deployment of convalescent plasma for the prevention and treatment of COVID-19. *J Clin Invest* 2020; **130**(6):2757-65.
3. Duan K, Liu B, Cesheng Li, Zhang H, Yu T, Qu J, et al. Effectiveness of conventional plasma therapy in severe COVID-19 patients. *Proc Natl Acad Sci U S A* 2020; **117**(17):9490-6.
4. Shen C, Wang Z, Zhao F, Yang Y, Li J, Yuan J, et al. Treatment of 5 critically ill patients with COVID-19 with convalescent plasma. *JAMA* 2020; **323**(16):1582-9.
5. <http://www.fda.gov/vaccines-blood-biologics/investigational-new-drug-ind-or-device-exemption-ide-process-cber/investigational-covid-19-convalescent-plasma-emergency-indcs>.

Sadaf Sheikh<sup>1</sup> and Muhammad Akbar Baig<sup>2</sup>

<sup>1</sup>Department of Emergency Medicine, Sultan Qaboos University Hospital, Muscat, Oman

<sup>2</sup>Department of Emergency Medicine, The Aga Khan University Hospital, Karachi, Pakistan

Correspondence to: Dr. Sadaf Sheikh, Department of Emergency Medicine, Sultan Qaboos University Hospital, Muscat, Oman

E-mail: [sheikh.sadaf@gmail.com](mailto:sheikh.sadaf@gmail.com)

Received: April 04, 2020; Revised: April 23, 2020;

Accepted: May 12, 2020

DOI: <https://doi.org/10.29271/jcpsp.2020.JCPSPCR.CR88>

• • • • •