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https://doi.org/10.1016/j.tracli.2021.05.007

Blood Donation during COVID-19 Vaccination drive - The Need for Concern

Dear Editor,

Donation of blood products and maintaining the blood reserves is a continuous and necessary element in sustaining the health of the community. However, merely in the absence of disease can healthy individuals donate blood or blood products in the regions wherever required in crisis situations like COVID 19. The maintenance of blood and blood products is a crucial component of the healthcare sector even in the pandemic time, which gets more crucial during these tough times due to the unavailability of donors owing to a number of reasons, thereby having a negative impact on the supply of the blood products [1]. As the number of people getting vaccinated goes up, there is a concern being raised on how the vaccine can affect the eligibility of blood donation and the concerning safety issues.

The United States Food and Drug Administration (US-FDA) apprises that the respiratory viruses probably are not found to be transmitted by transfusion of blood, and even there have not been any reported cases of transfusion-related transmission of COVID-19 cases worldwide. Standard measures and protocols routinely used to determine blood donor eligibility can prevent clinical respiratory infections from donating the blood [2]. There is a mixed opinion being brought up worldwide on the COVID-19 vaccine and blood donations. Some renowned organizations like the American Red Cross communicated that it is safe to donate blood even after getting vaccinated for COVID-19 [3]. Another opinion being raised is that some of the vaccines are made of inactivated killed and recombinant small RNA virus. So, there is no requirement of the deferral time after vaccination.

According to the latest instructions issued by the National Blood Transfusion Council (NTBC) under the Ministry of Health and Family Welfare (MoHFW), the deferral period of 28 days was reduced to 14 days after the last date of vaccination for the purpose of blood donation.This decision was taken as there's no live attenuated vaccine was available for the population in the country [4]. The studies in the United Kingdom by the Joint United Kingdom Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee (JPAC), any person who received the vaccine in the UK vaccination programme must not donate blood before less than 7days after the recent vaccination, and the person who received vaccination outside the UK should refer to the deferral time for the type of vaccine, they have received [5].

Therefore, effective protocols and guidelines targeting prioritizing blood donation during COVID-19 vaccination should be made and popularized among the general population alongside creating awareness required. There would be an ongoing and continuous need for blood and blood product donation, even during times of COVID-19 vaccination. Effective monitoring of the need and supply of blood products with an adequate and prompt response is required to prevent the unexpected blood shortage. Hence, the governments and the organizations should drive and encourage the donors to meet the needs of health care delivery and maintain sufficient blood and its products during these times [5]. Individuals who are healthy and not yet vaccinated can gladly come forward to donate blood in areas where there is a requirement, thereby improving the blood reserves of that area. The organizations ensuring the blood storage should follow good safety standards and infection control measures, making sure the blood products are readily available for the people in need.

Disclosure of interest

The authors declare that they have no competing interest.

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https://doi.org/10.1016/j.tracli.2021.05.004

COVID-19 vaccination: The impact on the selection criteria of the convalescent plasma donors

Sir,

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detected in Wuhan [1]. Subsequently, the worldwide spread of SARS-CoV-2 has resulted in a COVID-19 pandemic. Clinical management protocols for COVID-19 are evolving rapidly as more information about the epidemiology and pathophysiological changes in COVID-19 become available [2]. However, no definite treatment of COVID-19 has been found to date. The COVID-19 convalescent plasma (CCP) therapy has emerged as an important investigational therapy in the management of COVID-19 patients [3]. Historically, CCP therapy has been used in various infectious diseases, such as influenza, EBOLA and SARS viruses [4]. Therefore, several clinical trials were undertaken in different parts of the world to study the efficacy and safety of CCP therapy in the COVID-19 patients [5]. While few studies concluded that CCP therapy resulted in decreased mortality [6–9], others found no clinical benefit from the use of CCP therapy in COVID-19 patients [10,11]. This is probably due to the inconsistencies in defining the appropriate selection criteria of the intervention subject, the timing of intervention, antibody titre levels in the harvested CCP and clear demarcation of the primary as well as the secondary outcomes [3]. Emphasis is now being given to the early administration of CCP containing high titre IgG anti-SARS-CoV-2 antibodies for the therapy to be effective [12]. Further, we believe that there might be a lot of paranoia, uncertainty and false assumptions in the minds of donors about whole blood donation [WBD] as well as CCP donation amid this pandemic [13]. The efforts to develop an effective vaccine started as soon as February 2020. In fact, as of 20th April 2021, a total of six vaccines have been given emergency use authorization [EUA] by the World Health Organization recognized stringent regulatory authorities. Also, mass immunization programs against SARS-CoV-2 are currently going on in various countries throughout the globe. Therefore, there are now two types of seroconverted individuals:

- those as a result of natural infection with the SARS-CoV-2 virus and;
- those as a result of vaccination against SARS-CoV-2.

Additionally, with the overtly visible role of a transfusion medicine specialist [TMS] in the community these days [14], the scientific community is bound to ask them the following three queries.

Query1: whether individuals who have seroconverted as a result of COVID-19 vaccination are eligible to donate their immune plasma?

Discussion: The convalescent plasma obtained from an individual who was naturally infected by SARS-CoV-2 contains antibodies directed against the spike protein, the nucleocapsid protein and the receptor-binding domain [RBD] of the virus. Moreover, the plasma obtained from a seroconverted donor as a result of natural SARS-CoV-2 infection is polyclonal in nature and therefore carries antibodies having paratopes against the different epitopes of a pathogen. Also quantitatively, these are sufficient to be effective against the original virus and then randomly derived viral variants [15]. In contrast, the immune plasma obtained from vaccinated individuals has a high level of IgG antibody titres against the SARS-CoV-2 spike protein only. Therefore, despite providing immunity to the individual vaccinated, it will not be completely effective when used as a CCP in the COVID-19 sufferers. Further, according to United States Food and Drug Administration (US-FDA) guidelines, individuals who have never been infected with SARS-CoV-2 and have received a jab of COVID-19 vaccine are ineligible to donate their immune plasma in the configuration of a CCP [16]. However, other agencies, including the Indian regulatory agencies have not yet issued any interim recommendations in this regard.

Query 2: what are the CCP donation eligibility criteria for the COVID-19 recovered individuals who have also received a vaccination?

Discussion: For those who had been naturally infected with SARS-CoV-2, the US-FDA has recommended a deferral period of 14 days after the resolution of COVID-19 symptoms before the CCP donation. Further, the FDA has recommended a deferral period of 14 days after receiving a live vaccine and no deferral period for receiving an inactivated or killed vaccine [16]. While, few regulatory agencies have issued guidelines for donor deferral towards WBD following COVID-19 vaccination [17], others have largely remained silent on defining an appropriate deferral period for CCP donation in such vaccinated individuals. Furthermore, it has also been seen that previously infected individuals are producing very high titre SARS-CoV-2 specific neutralizing antibodies following vaccination [18]. Therefore, the CCP obtained from these individuals may be more effective in the COVID-19 treatment than the CCP obtained from non-vaccinated COVID-19 recovered patients alone.

Query 3: CCP donor eligibility for the COVID-19 recovered individuals who themselves received CCP therapy during their hospital stay?

Discussion: All the donors who wish to make either a WBD or CCP donation must meet the allogeneic blood donor criteria, including the three-month deferral from the date of CCP administration or the transfusion of any other blood component [16].

To conclude, the regulatory agencies, in particular, the Indian blood transfusion council must release some interim recommendations on the CCP donor eligibility in the aforementioned situations. Additional clinical trials are needed to know the efficacy of the CCP harvested from COVID-19 recovered individuals who have been vaccinated against those COVID-19 recovered individuals who who are not vaccinated at all.

Research involving human participants and/or animals

Human participants.

Informed consent

As per our department policy an informed consent is obtained from all the donors prior to their convalescent plasma harvest in accordance to our standard operating protocol.