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# Transfusion and Apheresis Science

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Letter to the Editor



## COVID-19: Further evidence of no transfusion transmission

To the editor,

SARS-CoV-2 pandemic had a huge impact on transfusion services, mostly due to the shortage of blood donors during periods of intense social isolation and the implementation of plasma convalescent protocol, requiring the fast and efficient recruitment of immunized donors for apheresis donation. Due to the fact that the SARS-CoV-2 transfusion transmission risks have never been mitigated, mostly due to the lack of studies specifically designed to address this question, blood centers had to deal with the risks of asymptomatic contaminated donors without knowing the disease risk for the recipients.

To date, transfusion transmission of any respiratory virus, including SARS-CoV and the Middle East Respiratory Syndrome (MERS)-CoV, has never been confirmed. Two recent studies evaluated the risks of transmission via blood transfusion of SARS-CoV-2. One has determined that there is no risk of RNA-emia in asymptomatic blood donors, but the sample size was very low [1]. The other study followed-up recipients of blood products of seven donors who tested positive for SARS-CoV-2 infection 6–15 days following the donation and documented that none developed SARS-CoV-2-related symptoms [2]. Similarly, one study has reported the case of an adult donor of hematopoietic stem cells who was in the incubation period of SARS-CoV-2 infection at the moment of the collection and the recipient had no laboratorial or clinical evidences of infection [3].

In our service, we had 5 donors who experienced COVID-19 symptoms after donation whose blood products have already been transfused to patients. The time between the donation and the COVID-19-related symptoms varied from 1 to 8 days. Two donors had the COVID-19 diagnosis confirmed by PCR, while 2 confirmed the infection through anti-SARS-CoV-2 immunoassays and 2 had presumptive diagnosis. There were 9 blood products derived from the donations: 6 platelet units, 1 red blood cell unit and 2 granulocyte concentrates. All but one of the 9 recipients were immunosuppressed and none presented COVID-19 related symptoms after the transfusions. Interestingly, one recipient with acute lymphoblastic leukemia was transfused with two granulocytes concentrates stemming from two donors with COVID-19 in the incubation period. This patient was critically ill, but the clinical symptoms have not worsened after the transfusion and COVID-19 RT-PCR was negative in the follow-up. [Table 1](#) displays a summary of the donors

and patients evaluated in this study.

In sum, we provide here further evidence that SARS-CoV-2 infection is not transfusion-transmitted. This is very important information for transfusion services, as sheds light to the fact that testing blood donors with immunoassays to detect anti-SARS-CoV-2 antibodies is not recommended unless the goal is to provide an epidemiological overview of the infection.

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### Declaration of Competing Interest

The authors report no declarations of interest.

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**Table 1**

Summary of the evaluation of the donors exhibiting COVID-19 symptoms and the follow-up of the involved transfused patients.

Donor ID	Recipient ID	Time between donation and transfusion	Time between donation and donor COVID-related symptoms	Time between donation and donor positive RT-PCR	Transfused blood product	Characteristics of the transfusion recipient	Post-transfusion follow-up
1	1	5 days	5 days	5 days	Platelets	8 years-old Acute lymphoblastic leukemia (ALL) D+7post allogeneic hematopoietic stem cell transplantation [HSCT] Vaso-occlusive disease (VOD)	No fever or other COVID19-related symptoms Improvement of clinical symptoms
	2	4 days	5 days	5 days	Platelets	1 year-old Neurologic and Pulmonary tuberculosis Citomegalovirus infection	No fever or other COVID 19-related symptoms Improvement of clinical symptoms
	3	4 days	5 days	5 days	Platelets	68 years-old Mantle lymphoma on chemotherapy	No fever or other COVID 19-related symptoms
2	4	2days	1 days	Presumptive. diagnosis	Platelets	13 years-old Acute lymphoblastic leukemia Chronic Intestinal Graft versus Host Diseases	No fever or other COVID 19-related symptoms Death 1 Month later
	5	2days	1 days	Presumptive. Diagnosis	Platelets	8 years-old Aplastic Anemia Chronic Intestinal Graft versus Host Diseases	No fever or other COVID 19-related symptoms Improvement of clinical symptoms
3	6	4 days	1 days	1 days	Whole Blood	2 years-old End-stage renal disease	No fever or other COVID 19-related symptoms
	7	Same days	7 days	Diagnosis confirmed by serology 14 days after beginning of symptoms	Granulocytes	5 years-old Acute lymphoblastic leukemia Fournier syndrome and sepsis	The patient presented episodes of fever daily, even before the transfusion No fever or other COVID 19-related symptoms
5	7	Same days	1 days	Diagnosis confirmed by serology 14 days after beginning of symptoms	Granulocytes	5 years-old Acute lymphoblastic leukemia Fournier syndrome and sepsis	The patient presented episodes of fever daily, even before the transfusion No fever or other COVID 19-related symptoms
	8	2 days	8 days	Diagnosis confirmed by serology 14 days after beginning of symptoms	Platelets	27 years-old Biphenotypic leukemia Induction Chemotherapy	No fever or other COVID 19-related symptoms Improvement of clinical symptoms