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Letter to the editor

Is SARS-CoV-2 screening still necessary before hematopoietic stem cell donation? Observations from a single center and review of the literature



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Early following the onset of SARS-CoV-2 pandemic, viral screening by nasopharyngeal swab became mandatory for allogenic hematopoietic stem cell (HSC) donor eligibility in our country, as a precautionary measure for donors and recipients health; since then, screening is still applied by the donor collection centers before qualification. As a consequence, SARS-CoV-2-positive donors are not considered eligible for donation and therefore postponed, or a risk-benefit ratio must be balanced to decide to proceed anyway to HSC collection. We recently reported our experience during the first wave of Covid-19 when we found a 6% (1 out of 17 donors) prevalence among stem cell donors [1]; other group reported cases of HSC collections from positive donors, who had a regular clinical course after donation [2–4] and, importantly, did not transmit the infection by the means of HSC donation, as also is expected with blood donations [5,6].

From November 2020 to January 2021 (second Covid-19 wave), a SARS-CoV-2 prevalence of 12% (1 out of 8 donors) was found at our donation center, whereas no further SARS-CoV-2-positive donors were detected thereafter, among the 30 donors evaluated from February 2021 to January 2022. Moreover, this last positive donor proceeded to HSC collection, with an uncomplicated clinical course and without viral transmission to the patient (*unpublished data*), consistently with the other reports from literature.

Although these numbers are very limited, the observed prevalence of positive HSC donors roughly mirrored what occurred in the general population and in blood donors [7] during the first and second waves; similarly, the absence of further positive donors is likely a consequence of the approvals of anti-Covid-19 vaccines, administered since the end of December 2020 and throughout the year 2021. The increased protection against SARS-CoV-2 among the vaccinated individuals allowed to overall reduce the morbidity burden caused by the virus and strengthened the confidence among transplant physicians toward the re-establishment of fresh HSC products to be infused to patients instead of cryopreserved grafts, this latter thanks also to the progressively lowering of the risk of donor uneligibility as a consequence of Covid-19 infection.

The precautionary measure of SARS-CoV-2 screening to HSC donors had been conceived at the beginning of the pandemic outbreak, in

March 2020, when few information were available about viral morbidity, mortality and modes of transmission; besides the potential risk of viral transmission by the means of donation of blood products, excluded afterwards by several studies and day-by-day experience, the uneligibility of SARS-CoV-2-positive donors to proceed to stem cell donation aimed at protecting donors' health from a potential harm caused by SARS-CoV-2 during the mobilization regimen with G-CSF or the bone marrow harvest in general anesthesia.

Now, at the time of writing (April 2022) and after two years of pandemic, we have learned much more about Covid-19 in terms of morbidity, transmission and protection/mitigation approaches; moreover, the vaccines greatly contributed to weaken the impact of SARS-CoV-2 infection on the hematopoietic stem cell donation and transplantation processes. Therefore, as a consequence, it is now conceivable to withdraw from the application of SARS-CoV-2 screening to asymptomatic, vaccinated HSC donors during the eligibility process for stem cell donation. Currently, any delay of stem cell transplantation due to uneligibility of the donor would appear hardly justifiable, given the reported safety of stem cell donation for both the donor and the recipient in the presence of an asymptomatic or paucisymptomatic SARS-CoV-2 infection. The systematic screening by nasopharyngeal swab would maintain its role for unvaccinated or symptomatic donors, narrowing the numbers of screened donors and consequently of the risk of delay of stem cell transplantation in case of a positive results.

In conclusion, we propose here to limit the application of SARS-CoV-2 screening by nasopharyngeal swab only to those stem cell donors who are not vaccinated or who present evocative symptoms during the eligibility process for donation. This would allow to reduce the risk of postponing a life-saving treatment like stem cell transplantation, that may negatively affect patient's prognosis, while maintaining the safety of donation in terms of both donor and patient health.

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Authors' contributions

R.C. conceived the study, collected and analyzed data, managed the stem cell donors and wrote the manuscript; E.V., L.B., I.C. and S.R. managed the stem cell donors; G.M., B. DeM., G.G. provided care for transplanted patients; all authors approved the final version of the manuscript.

Declaration of interests

None.

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