Coronavirus - SARS-CoV-2 & COVID-19

BACKGROUND

A novel coronavirus (now named SARS-CoV-2, with the resulting illness named COVID-19) emerged in Wuhan, China in December 2019. WHO declared a global health emergency on 30 January 2020, and the epidemic has now spread to all populated continents, with a global pandemic declared on 11 March 2020.
A particular feature of the COVID-19 pandemic has been the rapid progression, variety and extent of public health measures around the world. Travel restrictions in particular are presenting major challenges in logistics and transport. Meanwhile there remains no evidence that SARS-CoV-2 is transmissible via blood or haemopoietic progenitor cells from a donor who has no symptoms of COVID-19.

Please also take note of the SEAR Rapid Alert that was sent on the 4th of May 2020

AT VERIFICATION TYPING OR WORKUP

History of COVID-19 infection

Collection should be deferred for at least 28 days after recovery.

If the patient's need for transplant is urgent, the donor is completely well and there are no suitable alternative donors, earlier collection may be considered if local public health requirements permit*, subject to careful risk assessment.

Risk assessment should be based on:

- The date of full recovery.
- The duration and severity of illness.
- The results of post-recovery testing.

*Note that there is evidence that SARS-CoV-2 RNA can remain detectable by PCR in nasopharyngeal samples for an extended period after full recovery. Nasopharyngeal shedding does not equate to viraemia, and other coronaviruses (including SARS-CoV-1 and MERS-CoV) have not displayed transmissibility via blood or HPC. Nonetheless a donor with detectable nasopharyngeal SARS-CoV-2 RNA could be considered a potential infective risk to staff and other donors at a collection centre.

Contact with COVID-19 – donors who report contact with a confirmed case

Collection should be deferred for 4 weeks after a donor's last contact with a person with confirmed COVID-19 infection.

If the patient's need for transplant is urgent, the donor is completely well and there are no suitable alternative donors, earlier collection may be considered if local public health requirements permit, subject to careful risk assessment.

Risk assessment should be based on:

- The last date of contact.
- The nature of the contact.
- The results of any post-contact testing.

Geographical risk – donors who have travelled internationally

Collection should be deferred for 4 weeks after any international travel. Even in countries where local transmission of COVID-19 is high, people who have travelled internationally are at increased risk of exposure.

If the patient's need for transplant is urgent, the donor is completely well and there are no suitable alternative donors, earlier collection may be considered if local public health requirements permit, subject to careful risk assessment.

Risk assessment should be based on:

- When the donor returned.
- Which countries the donor visited.
- Any contact with a person with known COVID-19 infection.
- The results of any post-travel testing.

Geographical risk – donors residing in a high-risk country

To identify countries where local transmission of COVID-19 is high, registries may refer to national health authorities and/or trans-national sources such as WHO and ECDC. Given the spread of the pandemic to nearly all developed countries as of April 2020, however, it may be more realistic to define geographical risk in terms of whether the donor's community exposure risk exceeds that of the patient.

In the absence of known contact with COVID-19, risk assessment should take into account:

- The level of risk and applicable public health restrictions in the donor's region.
- Any recent travel to higher-risk regions within the same country.
- Any contact with a person with known COVID-19 infection.

In the absence of symptoms, routine pre-donation testing should not be considered necessary because there is no known benefit to the recipient. However, if the donor's risk of community exposure is considered to be very high and testing can be performed without adding to that risk, there may be value in avoiding potential exposure of the donor to G-CSF while COVID-19 is incubating.

Collection-day testing

In the absence of symptoms, testing the donor for COVID-19 on the day of collection is not recommended because:

- There is no benefit to the donor or to collection staff if collection cannot be prevented.
- A validated blood test is not yet available.
- There is no benefit to the patient because there is no evidence that detectable nasopharyngeal PCR predicts viraemia in a pre-symptomatic or symptomless COVID-19 infection.

Planned cryopreservation

If there is concern that the donor is at high risk of community-acquired infection between work-up and collection, pre-planned cryopreservation will allow patient conditioning to be withheld until successful donation and delivery are confirmed.

Cryopreservation at the collection site may have additional advantages in relation to transport delays and travel restrictions.

Post-donation cryo-quarantine

Cryopreservation of the product allows patient conditioning to be delayed until after collection, and any donor symptoms that develop in the immediate post-donation period should be reported to the transplant centre.

Applying a formal post-donation “cryo-quarantine” period, however - whereby a donation will only qualify for release if the donor tests negative or remains symptom-free at the end of the cryo-quarantine period - is not recommended:

- Failed qualification can occur as a result of COVID-19 exposure that occurs after
- In the absence of symptoms, a positive nasopharyngeal swab on Day 14 post-collection or later is not consistent with the presence of pre-symptomatic COVID-19 infection at the time of collection.
- Failed qualification due to the possibility of pre-symptomatic COVID-19 infection at the time of donation is not supported by evidence of transmissibility via blood or HPC during the pre-symptomatic phase.
- Therefore withholding a donation for failed quarantine is detrimental to the patient because they lose their first-choice donor, and detrimental to the donor because their donation and associated community exposure is wasted.

Nonetheless, it is acknowledged that certain jurisdictions may require such “cryo-quarantine” by regulation.

RATIONALES

There is increasing evidence that person-to-person transmission can occur during the pre-symptomatic phase of COVID-19. However, respiratory transmissibility does not necessarily equate to transmissibility via blood or HPC.

Studies of the blood phase of COVID-19 have so far been limited, and have been complicated by the unknown validity of current blood tests. Other coronaviruses, however, have not displayed transmissibility via blood or HPC, which suggests that viraemia in this group of viruses is limited to the symptomatic phase.

Beyond the possibility of blood or HPC transmission risk, there are also important public health considerations and a variety of community measures around the world that are having major impacts on HPC donors and collection facilities. Together with the limited evidence base in this rapidly evolving pandemic, every individual case should ideally be assessed in consultation with infectious disease and/or public health experts.

REFERENCES

WHO: https://www.who.int/emergencies/diseases/novel-coronavirus-2019

ECDC: https://www.ecdc.europa.eu/en/publications-data/risk-assessment-outbreak-acute-respiratory-syndrome-associated-novel-1

COVID-19 is presenting major logistical challenges in managing and assessing HPC donors and in collecting and transporting HPC products. WMDA has developed a publicly-available resource page at https://share.wmda.info/x/Yj6OF.