

COVID-19 (coronavirus disease 2019) pandemic caused by SARS-CoV-2: Practical recommendations for hemophilia patients

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For hemophilia patients currently treated with standard or extended recombinant half-life FVIII or FIX concentrates, FEIBA, FVIIa, or emicizumab:

1. No reason to change the recommended treatment regimen.
2. No reason to fear at this stage a shortage of treatment supplies, manufacturing issues or interruption in the supply chain.
3. Contact HTC if stock at home or at hospital is limited.
4. If you treat at home, do not order more replacement products than reasonably needed. However a few extra doses for home use are prudent in case of any delivery delays or disruptions.

For patients treated with plasma-derived FVIII/FIX

1. Viral inactivation and elimination procedures employed are sufficient to destroy lipid-enveloped viruses like SARS-CoV-2.¹
2. Not recommended to switch product.
3. No supply disruptions in plasma-derived product supplies have been detected to date. The primary concern is a decrease in plasma collections at the front end of the plasma-derived product production at this stage.^{2,3}
4. Blood and plasma donation continues to be a safe process, the need for plasma donations is as great as ever. The support of current and new donors remains critical to maintain an adequate supply of blood and plasma during the pandemic.
5. All HTCs and blood and plasma collection centers are reminded to follow guidelines to protect both personnel and donors to prevent the spread of SARS-CoV-2 through human-to-human contact via respiratory droplets, as well as fomites.⁴
6. For patients treated with other blood-derived products which are not virally inactivated (eg, cryoprecipitate, platelets), treatment decisions should be based on clinical risk/benefit analysis balancing the safety of not treating a bleeding event and any residual risk of acquiring another infection.

For patients currently in clinical trials (excluding post-marketing trials)⁵

1. Contact your HTC to discuss implications of the pandemic
2. Ensure availability of study drugs and that the treatment is not interrupted

3. Discuss modalities of follow-up/monitoring with study team of HTC. Remote follow-up visits are strongly encouraged unless an investigational product has to be administered and a face to face monitoring is needed to prevent dangerous side effects.
4. For patients who recently received a gene therapy product (≤ 12 months after infusion), scheduled liver function testing should remain a priority for safety and efficacy purposes.
5. Do not discontinue or switch treatment if you are currently receiving a clinical trial treatment unless directed to do so by the study team.

For patients who are scheduled to be soon enrolled in a trial testing a new treatment⁵

1. Postponement of enrollment should be discussed with the study team.
2. Many medical centers have banned initiation of new clinical trials so as to not distract medical resources needed to deal with the pandemic.

Specific measures to reduce exposure of SARS-CoV-2, the virus that causes COVID-2 in patients with haemophilia

1. All measures to reduce exposure to persons with COVID-19 should be proactively promoted in all patients with comorbidities (cardiovascular disease, hypertension, obesity, diabetes, HIV, old age), or on steroids or other powerful immunosuppressant drugs.^{6,7}
2. Exposure to everyone, including lower risk individuals and children, is the single most important precaution to avoid infection. Sheltering in place and social distancing are the most important tools to use.
3. Minimize the need to visit health care professionals in hospitals or offices. Non-urgent care and elective surgeries should be postponed.
4. Paracetamol (acetaminophen) reduces fever without inhibiting the inflammatory response needed for fighting coronavirus and is recommended for persons with bleeding disorders.
5. Paracetamol (acetaminophen) should not exceed 60mg/kg/day or 3g/day, since it causes liver damage at higher doses.
6. Ibuprofen and other non-steroidal anti-inflammatory drugs (NSAIDs) are usually not advised in patients with bleeding disorders because they may increase bleeding through inhibition of platelet function. In addition, in particular ibuprofen has been suggested to either make COVID-19 worse or enhance risk of infection with SARS-CoV-2 due to upregulation of the entry receptor, angiotensin converting enzyme 2. However, the evidence supporting this is limited at this time.⁸⁻¹⁰
7. Remember, specific hygienic measures, such as regular hand washing with soap, not touching one's face, not aerosolizing a cough, and maintaining at least 2 meters (6 feet) distance are key to prevent coronavirus transmission.

Specific measures in case of hospital admission of a bleeding disorders patient with COVID-19 infection

1. Good liaison between hospital where patient is admitted and HTC
2. Arrange replacement therapy / secure venous access
3. Inform team in case of treatment with emicizumab (risk of mis-management and mis-interpretation of haemostasis laboratory tests by unfamiliar health professionals)¹¹
4. Inform if ongoing experimental treatment with rebalancing agents (anti-TFPI and fitusiran) and risk of thrombosis or other clotting system imbalances, or recent treatment with gene therapy and liaise with HTC.

The news is changing daily. We will update WFH information as needed,

References

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Websites of interest

<https://www.cdc.gov> Centers for Disease Control and Prevention (US)

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019> and <https://www.who.int/health-topics/coronavirus> World Health Organization

<https://www.ecdc.europa.eu/en/novel-coronavirus-china> EU Center for Disease Prevention and Control

<https://www.nih.gov/health-information/coronavirus> National Institutes of Health

<https://www.worldometers.info/coronavirus/> global data

<https://www.nejm.org/coronavirus> New England Journal of Medicine summaries