ALBERTA PRECISION LABORATORIES
Leaders in Laboratory Medicine

Hemlibra®

APPLICABILITY: This document applies to APL, AHS, Covenant Health, and all other health care professionals involved in the transfusion of blood components and products in Alberta.	***OTHER NAMES:*** *emicizumab* ***Company:*** *Hoffmann-La Roche* ***Class:*** *Recombinant monoclonal antibody*

	INTRAVENOUS			OTHER		
ROUTES	**DIRECT IV**	**Intermittent Infusion**	**Continuous Infusion**	**SC**	**IM**	**OTHER**
Acceptable Routes*	No	No	No	Yes	No	N/A

* Administration of blood components and blood products is a restricted activity. For specific conditions that apply to a profession's authorization to administer blood components and blood products, consult the applicable discipline-specific regulation under the Health Professions Act (Alberta). Health care professionals with this authorization require the applicable education, training and competency.

DESCRIPTION:

- Hemlibra® is an engineered bispecific monoclonal antibody which bridges activated factors IX and factor X to restore the natural function of activated factor VIII.
- Sterile, preservative-free, ready to use solution.
- Solution is clear and colourless to slightly yellow.
- Available in single dose vials: 1 mL vial at a concentration of 30 mg/mL and 0.4, 0.7, and 1.0 mL vials at a concentration of 150 mg/mL.
- Also contains L-arginine, L-histidine, and poloxamer 188, and L-aspartic acid.
- Produced in Chinese hamster ovary cells.
- Preservative-free.
- Latex-free.

AVAILABILITY:

- Patient-specific requests must be submitted by a physician associated with a hemophilia treatment centre.
- Hemlibra® is not routinely stocked in Alberta hospitals. Consult your local transfusion service regarding availability.
- Supplied by Canadian Blood Services.

INDICATIONS:

- Indicated in adults and children with hemophilia A (congenital factor VIII deficiency) for routine prophylaxis to prevent or reduce the frequency of bleeding episodes.
- Patients will be considered for approval for Hemlibra® if:
  - The patient has congenital hemophilia A (congenital factor VIII deficiency).
  - The patient has Factor VIII inhibitors (>0.6 BU/mL) confirmed on more than one occasion by an appropriate assay.

CONTRAINDICATIONS:

- Patients who are hypersensitive (allergic) to this drug or any ingredient in the formulation or container (see product monograph for complete listing).
- Note: Hemlibra® is not indicated for acute bleeds. Consult with a hemophilia physician if rFVIIa or FVIII treatment is required for acute bleeding in a patient on Hemlibra®.

WARNINGS:

- There is an increased risk of thrombotic events and/or thrombotic microangiopathy when used in conjunction with more than 100U/kg/24h of activated prothrombin complex concentrate (aPCC, eg. FEIBA). Use of aPCC during Hemlibra® treatment should be avoided due to the long half-life of the product.
- If no other effective treatment options/alternatives are available, initial dose of aPCC should not exceed 50U/kg, and 24-hour dose should not exceed 100 U/kg.
- Nonclinical investigations have shown a procoagulant effect of emicizumab on rFVIIa; therefore, a potential risk of thromboembolism cannot be excluded.
- Bypassing agent dosing may be affected by Hemlibra treatment.
- Hemlibra affected intrinsic pathway clotting-based laboratory tests, including the activated clotting time (ACT), activated partial thromboplastin time (aPTT) and all assays based on aPTT such as one-stage factor VIII activity.

DOSE:

- Consult with a hematologist or local hemophilia clinic.
- Bypassing agents should be discontinued at least 24h prior to starting Hemlibra® prophylaxis.
- Prophylactic factor VIII products may be continued during the first week of Hemlibra® prophylaxis.
- Recommended loading dose is 3 mg/kg, once weekly for the first 4 weeks.

Recommended maintenance dose	
Patients less than 12 years of age, or weighing less than 40kg:	Patients 12 years of age or older, and weighing 40kg or more:
○ 1.5 mg/kg once every week, or ○ 3 mg/kg once every two weeks	○ 1.5 mg/kg once every week, or ○ 3 mg/kg once every two weeks, or ○ 6mg/kg once every four weeks

- If a dose is missed, administer the missed dose as soon as possible and then resume usual dosing schedule. Do not administer two doses on the same day to make up for a missed dose.

ADMINISTRATION:

Confirm written (signed) consent has been obtained and documented prior to requesting blood product from lab/transfusion service where possible.

Pre-Infusion:

- Ensure recent patient weight is on file.
- Ensure pertinent labs are available as required.
- Ensure any ordered premedications have been given (antihistamines, antipyretics prn).
- Perform pre-transfusion checks per AHS Transfusion of Blood Components and Blood Product Policy.
- Report any new onset acute illness to MD/authorized prescriber prior to commencing infusion.

Access: Subcutaneous injection only.

Administration Supplies:

- Syringe of appropriate size.
- Filter Transfer Needle (supplied with product as of January 2021).
- 18 G Transfer needle or 15 mm vial adapter (if not included with product).
- 25-27 G injection needle.
- Alcohol wipes.
- Gauze or cotton ball.

Compatible Solutions:

- N/A
- Do not mix with other products, medications, or solutions.

Administration

- Bring Hemlibra® vials to room temperature.
- Do not shake.
- Solution does not require dilution.
- Visually inspect for discoloration and particulate matter. Do not use if particulate matter is visible or the product is discoloured. Contact your hematologist or local hemophilia clinic with concerns prior to discarding questionable vials.
- Using a transfer needle or vial adapter, draw into a transfer syringe.
- Multiple vials of the same concentration may be drawn into a single syringe. Use a new transfer needle or vial adapter for each vial.
- Use immediately after transferring from the vial to the syringe.
- Vials are single-use only. Any product remaining in the vial should be discarded.

Additional Notes

- Rotate site with each administration.
- In hospital/facility storage of Hemlibra® must be in a Transfusion Service approved location. Product stored by the patient for home use must comply with manufacturer's recommendations.
- Discard any unused portion immediately after it has been accessed

Infusion Rate

- Rate is specified by the most responsible health practitioner (MHRP).

POTENTIAL HAZARDS WITH PARENTERAL ADMINISTRATION:

Adverse Events

- Potential adverse events related to a blood product transfusion range in severity, from minor with no sequelae, to life-threatening.
- All adverse events occurring during a transfusion must be evaluated to determine whether or not the transfusion can be safely continued/restarted. Acute reactions need medical involvement
- All adverse events suspected to be related to a product transfusion (whether during or after a transfusion) must be reported to your local transfusion service.
- The most common adverse reactions include local injection-site reactions (erythema, pain, pruritus), arthralgia, headache, pyrexia, diarrhea, and myalgia
- The most serious adverse reactions reported in clinical trials include thrombotic events and thrombotic microangiopathy, including cavernous sinus thrombosis and superficial vein thrombosis contemporaneous with skin necrosis

Drug Interactions

- When taken concomitantly with > 100 U/kg/24 h of aPCC, there is increased risk of thrombotic microangiopathy (TMA) and thromboembolism.
- Hemlibra® increases the patient's coagulation potential. If bypassing agents (eg. aPCC, rFVIIa) are required, the dose may need to be lowered.

Laboratory Test Interference

- Hemlibra® interferes with intrinsic pathway coagulation tests based on activated clotting time (ACT) and activated partial thromboplastin time (aPTT).
- Effects on coagulation assays may persist for up to 6 months after the last dose

Side Effects - Flushing - Headache - Nausea - Itching and redness at the venipuncture site	→	**Action:** Slow rate of infusion
Potential Allergic Reaction - Stuffy nose - Hives/severe itching - Cough - Chest pain - Wheezing - Facial swelling - Fainting	→	**Action:** **STOP** infusion **IMMEDIATELY** and contact physician

NURSING IMPLICATIONS:

Patient Monitoring:

- Vital Signs: Pre-administration and at least 20 min. post-dose for any adverse effects.
- Patients also taking aPCC or at higher risk of thrombotic microangiopathy (TMA) should be closely monitored

Patients receiving blood product transfusions must be observed closely for signs of any unexpected or untoward reactions. These reactions may occur during or after the infusion of blood or blood products. For follow up instructions to a transfusion reaction, click http://www.albertahealthservices.ca/4240.asp

Documentation:

- Complete documentation per the *AHS Transfusion of Blood Components and Blood Products Policy*
- Patient tolerability should be documented in appropriate flow chart or clinical record (electronic or paper).
- Document vital signs as required in the appropriate flow chart or clinical record (electronic or paper).
- Provide patient notification documentation where required.
- Documentation for home use of Hemlibra® must follow the policies of the clinical program

STORAGE & STABILITY

- Store at 2-8°C in the original carton until expiry (up to 24 months from date of manufacture).
- May be stored at room temperature, not to exceed 30^{O}C for a maximum of 7 days (cumulative time out of refrigerated storage).
- Protect from light

CONTACT INFORMATION:

Approved By: APL Transfusion Medicine Discipline Council
For questions or comments please contact: Transfusion.SafetyTeam@aplabs.ca

REFERENCES

Hoffmann-La Roche Limited. November 2021. Hemlibra Product Monograph. Submission Control No 253853. [Accessed 24June22]. https://www.rochecanada.com/content/dam/rochexx/roche-ca/products/ConsumerInformation/MonographsandPublicAdvisories/Hemlibra/Hemlibra_PM_E.pdf

PS-59 AHS Transfusion of Blood Components and Blood Products Policy.