ALBERTA PRECISION LABORATORIES
Leaders in Laboratory Medicine

HyQvia®
Immune Globulin (Human) 10% and Recombinant hyaluronidase (Human)

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:*** *Facilitated Subcutaneous Immune Globulin (SCIG)* ***Company:*** *Takeda* ***Class:*** *Manufactured blood product, derived from human plasma*

In the event of discrepancy between APL Monograph and Manufacturer's documentation or patient resources, the APL Monograph will take precedence.

	INTRAVENOUS			OTHER		
ROUTES	**DIRECT IV****	**IV 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.

** Direct IV administration of blood products may be performed by health care professionals that have authorization of administration of blood products within their scope of practice.

DESCRIPTION OF PRODUCT:

- HyQvia® is a 10% immune globulin (human) and recombinant human hyaluronidase solution for subcutaneous infusion.
- Recombinant human hyaluronidase reversibly alters connective tissue permeability to optimize dispersal and absorption of the normal immune globulin.
- Available as a dual-vial unit of 10% immune globulin (human) with the required amount of recombinant hyaluronidase (human) in the following sizes:

HyQvia® vial size	10% Immune Globulin (human) vial	Recombinant hyaluronidase (human) vial
2.5 g	2.5 g/25 mL	200 units/1.25 mL
5 g	5 g/50 mL	400 units/2.5 mL
10 g	10 g/100 mL	800 units/5 mL
20 g	20 g/200 mL	1600 units/10 mL
30 g	30 g/300 mL	2400 units/15 mL

- Viral inactivation/removal steps include solvent/detergent treatment, nanofiltration, and incubation at low pH and elevated temperature.
- 10% Immune globulin solution contains 10% protein solution (100mg of protein per mL).
  - Contains no more than 140 mcg/mL IgA.
- 10% immune globulin (human) is clear and colourless or pale yellow. Recombinant human hyaluronidase is clear and colourless.
- 10% Immune globulin (human) pH is 4.6 to 5.1. Recombinant human hyaluronidase pH is 6.5 to 8.0.
- Human serum albumin is a stabilizer in the recombinant human hyaluronidase.
- Glycine is a stabilizer in the 10% immune globulin (human) solution.
- Preservative-free
- Latex-free

AVAILABILITY:

- Canadian Blood Services (CBS) provides SCIG products from multiple manufacturers at predetermined percentages. Local availability of a particular SCIG brand is based on provincial alignment with CBS availability.
- Requests for SCIG must meet approved indications. ASCIG referral form may need to be completed for initial approval and renewal unless ordered through Connect Care.

INDICATIONS FOR USE:

- SCIG may be appropriate in a number of clinical indications. Refer to the Prairie Collaborative Criteria for the Clinical Use of Immune Globulin.
- HyQvia® may be used in adult patients.

CONTRAINDICATIONS:

- Patients who are hypersensitive to human immune globulin, or any ingredient in the formulation or component of the container.
- Patients who are hypersensitive to hyaluronidase or recombinant human hyaluronidase.
- IgA deficiency when the patient has antibodies against IgA and a history of hypersensitivity (can result in severe anaphylactic reaction).
- HyQvia® is not authorized for use in pediatric patients.

WARNINGS:

- Caution in dosing and administration rates for patients at risk of renal failure or thrombosis; especially those over 65 years old.
- There is clinical evidence of an association between immune globulin administration and thrombotic and thromboembolic events. Thrombosis may occur even in the absence of known risk factors. Risk factors for thromboembolic events include: obesity, advanced age, hypertension, diabetes mellitus, history of vascular disease or thrombotic episodes, acquired or inherited thrombophilic disorders, prolonged periods of immobilization, severe hypovolemia, diseases which increase blood viscosity, hypercoagulable conditions, use of estrogens, indwelling central venous catheters, and cardiovascular risk factors. Ensure patients are well-hydrated prior to administration.
- The immune globulin component of HyQvia® contains blood group antibodies which may act as hemolysins and induce in vivo coating of red blood cells with immunoglobulin, causing a positive direct antiglobulin reaction and, rarely, clinically significant hemolysis.
- May impair the efficacy of live attenuated virus vaccines. Refer to the Canadian National Advisory Committee on Immunization for further recommendations.

DOSE:

- Use the lowest dose for the shortest duration required to achieve clinical efficacy.
- If SCIG is being used for immune replacement therapy (primary or secondary), monitoring trough levels is recommended.
- Refer to the Prairie Collaborative Criteria for the Clinical Use of Immune Globulin for dosing recommendations.
- For patients naïve to immune globulin treatment, administer HyQvia® gradually from a weekly equivalent dose to a 3-4 week interval.
- For patients switching from intravenous treatment, administer HyQvia® at the same monthly dose and frequency. Begin HyQvia® 1-2 weeks after the last IV dose.
- For patients switching from another SCIG, start the first HyQvia® infusion one week after their last SCIG treatment at 25% of the total **monthly** dose (this should be the exact same weekly dose as the previous SCIG). The second dose of the ramp-up is one week after the first HyQvia® infusion at 50% of the total **monthly** dose. On week 4, they will receive 75% of their total **monthly** dose.

ADMINISTRATION:

Confirm signed consent has been obtained and documented prior to requesting blood components or products (human-source) from lab/transfusion service where possible.

***The administration information below is intended for use by health care professionals when HyQvia® is administered in an AHS health care facility (e.g. ambulatory IV clinic). Refer to your local bleeding disorders clinic for home-use of HyQvia® so that patients are connected with the appropriate patient support program. ***

Refer to MRHP orders for patient-specific administration and ramp-up instructions.

Pre-Infusion:

- Ensure recent patient weight and height is on file.
- Ensure pertinent labs are available as required (ie. trough IgG, IgA, CBC).
- Ensure any ordered premedications have been given (antihistamines, antipyretics prn).
- Perform the appropriate pre-transfusion checks per AHS Transfusion Policy and Procedure.
- Report any new onset acute illness to the authorized prescriber prior to starting infusion.

Access:

- Subcutaneous infusion only in the upper abdomen or thighs.
  - 2 opposite sites should be used for doses greater than or equal to 600 mL

Administration Supplies:

- Infusion administration set(s) (i.e. butterflies or "multisite" sets): 24G – 26G, 14mm
  - Vented pump tubing (if required)
- Syringe(s)
- Sterile, empty IV bags (if pooling 10% immune globulin solutions as per MRHP instructions)
  - Not supplied by the Transfusion Medicine lab
- Infusion pump (if required)
- Normal saline (if required for flushing post-infusion as per MRHP instructions)
- Blunt needle or equivalent non-vented needle (to draw up recombinant human hyaluronidase)
  - 18 – 22G needle for drawing up the 1.25mL vial size of recombinant human hyaluronidase vial

Other Supplies:

- Antiseptic wipes or alcohol swabs
- Tegaderm film (or equivalent)

Administration:

- Bring HyQvia® to room temperature for a minimum of 60 minutes. Do not use heating devices.
- Do not shake.
- Visually inspect the product prior to administration. Do not use products that are cloudy or contain particulates.
- **Do not** mix the HyQvia® dual-vial units together.
- The two components of HyQvia® must be infused one after the other, starting with the recombinant human hyaluronidase.
- Ensure that the **full** contents of the recombinant human hyaluronidase vial(s) are infused even if administering a partial amount of the immune globulin vial.
- Start the immune globulin infusion **within 10 minutes** of completing the recombinant human hyaluronidase infusion.
- If an infusion pump is being used, follow the manufacturer's instructions.

Infusion Rate:

- Recombinant human hyaluronidase: 1 – 2 mL/min/site, or as tolerated.
  - Pump rate: 60 – 120 mL/h
- 10% Immune globulin ramp-up infusion rate recommendations:
- First two (2) infusions of HyQvia®:

Duration	Patient weight less than 40 kg Rate (mL/h/site)	Patient weight greater than or equal to 40 kg Rate (mL/h/site)
Start x 10 min.	5	10
10 min.	10	30
10 min.	20	60
10 min.	40	120
Remainder of infusion	80	240

- Next two to three (2 – 3) infusions of HyQvia®:

Duration	Patient weight less than 40 kg Rate (mL/h/site)	Patient weight greater than or equal to 40 kg Rate (mL/h/site)
Start x 10 min.	10	10
10 min.	20	30
10 min.	40	120
10 min.	80	240
Remainder of infusion	160	300

- Subsequent infusions of HyQvia®:
  - After 4-5 successfully tolerated infusions with the ramp-up schedule (as above) to the max rate, subsequent infusions can start at the maximum rate without incremental rate changes.
  - **NOTE:** Nursing may titrate max rate determined by patient comfort and tolerability, no physician order required.

POTENTIAL HAZARDS WITH PARENTERAL ADMINISTRATION:

- 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 should 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) should be reported to your local transfusion service.
- Aseptic meningitis syndrome, transfusion related acute lung injury (TRALI) and delayed hemolytic anemia due to blood group antibodies are associated with pooled immune globulin products.
- The most common adverse reactions to HyQvia® include: local injection-site reactions (swelling, redness, and itching), gastrointestinal symptoms (e.g. abdominal pain, nausea, diarrhea, etc.), edema, myalgia, headache, dizziness, and hypertension.

Side Effects
- Flushing
- Headache
- Nausea
- Itching and redness at the injection 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 Vital Signs and Monitoring:

	Pre-transfusion	At each rate increase (to assess tolerability)	Remainder of transfusion	Post transfusion
All Patients	**Yes**	**Yes***	**q1h**	**20-30 min post, then PRN**

Note: Vital signs/patient monitoring may be conducted more frequently as determined by clinical condition of patient.

**Rate increase assessment applies for initial 4-5 treatments. Vital signs and monitoring schedule for subsequent treatments should be done pre-transfusion, q1h during, and for 20 – 30 min. post-transfusion, then PRN.*

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, go to Transfusion Reactions | Alberta Health Services

Documentation:

- Ensure documentation is completed as per the AHS *Transfusion of Blood Components and Products Policy.*
- The transfusion documentation should be double signed.
- Start and stop time of infusion and assessment of patient tolerability should also 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 of transfusion documentation where required.
- Documentation for home use of HyQvia® must follow the policies of the clinical program.

STORAGE & STABILITY

- Store at 2-8°C until expiry (up to 36 months from date of manufacture).
- May be stored at room temperature (not to exceed 25°C) for up to 3 months after removal from the refrigerator. Do not return to refrigeration once removed.
- Product stored by the patient for home use must comply with manufacturer's recommendations. Product issued for home use and returned will be discarded.
- Do not freeze.
- Do not shake.
- Protect from light.
- Do not use expired product.

COMMENTS:

Date Effective: 25 APR 2024
Revision #: 1.00
Document Number: TM40-01.02.154
Approved By: APL Transfusion Medicine Discipline Council

For questions or comments regarding this document please contact: Transfusion.SafetyTeam@aplabs.ca

REFERENCES

HyQvia® manufacturer monograph. Available from www.takeda.com

Prairie Collaborative Immune Globulin Utilization Management Framework Project. *Criteria for the clinical use of immune globulin*. Alberta Ministry of Health, Shared Health Manitoba, and Saskatchewan Ministry of Health; 2018. Available from www.ihe.ca

Canadian National Advisory Committee on Immunization