Plasma

TRANSFUSION MEDICINE SERVICES

OTHER NAMES	CLASSIFICATION	ALERTS
Apheresis Frozen Plasma (AFP) Frozen Plasma (FP) OctaPlasma (Solvent/Detergent treated Plasma)	Blood Component	HIGH ALERT SUBSTANCE VERIFICATION REQUIRED BY 2 HCP

PREPARATION and ADMINISTRATION

Prepared from Human Blood.
Ensure ABO Type is compatible with patient, consent is documented and blood matches prescribed order.

Plasma is stored frozen and requires 30 -60 minutes to prepare for use.

Primary Infusion

IV Bag (large volume pump)

AFP, FP, OctaPlasma: Ready-to-use bag "unit" – exact amount is located on the unit label and Transfusion Medicine (TM) tag Diluent: none

Adults: 60-120mL/hr for initial 15 min then increase to ordered rate
Pediatrics: When appropriate, initiate at half the ordered rate for first 15 minutes. Increase rate if tolerating well
Transfuse as rapidly as clinically tolerated and as specified by Authorized Prescriber
Maximum rate: 1500 mL/h ▶ **Exception-OctaPlasma:** outside of an emergency do not exceed 1 mL/kg/min

Complete infusion within 4 hours of **time of issue** found on the TM tag, or the time removed from a transport cooler

Do NOT transfuse multiple units simultaneously outside of an emergency

Syringe (syringe pump)

For instructions on portioning (aliquot) units for syringe pumps, see Transfusing via Syringe Pumps Diluent: none

Adults: 60 mL/h for initial 15 min then increase to ordered rate
Pediatrics: When appropriate, initiate at half the ordered rate for first 15 minutes. Increase rate if tolerating well
Complete infusion within 4 hours of **time of issue** found on TM tag or time removed from transport cooler

Requirements and Monitoring

Administration: Infusion device, IV tubing with standard (170-260micron) blood filter "*Dual spike blood tubing*"

Do not over-spike the blood units. Insert with one quarter turn, clockwise twists. Do not twist in both directions while spiking or un-spiking. Pulling the spike out in a straight downward motion will tighten the port on the spike.

Discard tubing after 4 units or 4 hours; if more than one hour has elapsed between transfusions; in accordance with the manufacturer's insert, and/or if tubing becomes occluded, contamination is suspected, or integrity compromised

Keep unopened back up of NS with standard IV tubing nearby for prompt response if an adverse event (AE) presents.

Baseline vitals within 60 minutes before starting infusion, reassess 15 minutes after starting infusion, Q1h (minimum), when infusion is complete and 20 minutes to 1h post completion. Q4hx24hours for inpatients **Document all vitals taken**.
Blood pressure via cuff or arterial line
Temperature
Heart Rate
Respirations
Lung sounds in non-verbal, non-oriented or pediatric patients and patients with CHF or pulmonary dysfunction

Assess patient for risk of TACO. Risk factors: Cardiac or renal dysfunction; older age; positive fluid balance; signs of cardio/pulmonary strain

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INDICATIONS

- Bleeding patients or patients undergoing invasive procedures who require replacement of multiple plasma coagulation factors
- Patients with massive transfusion with clinically significant coagulation abnormalities
- Patients on warfarin who are bleeding or need to undergo an invasive procedure before vitamin K could reverse the warfarin effect, and where prothrombin complex concentrate is not available or is contraindicated
- Patients with selected coagulation factor or with rare specific plasma protein deficiencies for which a more appropriate alternative therapy is not available
- Preparation of reconstituted whole blood for exchange transfusion in neonates
- Patients with thrombotic thrombocytopenic purpura (TTP) or hemolytic uremic syndrome (HUS) undergoing plasma exchange

ADVERSE EFFECTS

NEW onset of any of the following:

Hypertension/Hypotension	Significant change in cardiac rate/rhythm
Tachypnea/bradypnea/dyspnea	Severe headache
Fever/chills/rigors	Back/chest/flank pain
Puritis/urticaria/rash	Anuria/hematuria/oliguria
Bleeding/pain at IV site	Nausea/vomiting
Patient feels unwell	Unexplained anxiety

If an AE is suspected: stop the transfusion, disconnect and cap the blood tubing, initiate the backup line of NS and consult the authorized prescriber (AP) for medical management. Notify the TM lab of a suspected reaction.

- Review the component label, TM tag and patient ID to rule out a verification (clerical) error and that the expiry date and time have not passed.
- Resume transfusion cautiously as directed by AP. Directly observe patient x5min then closely observe x10min.
- Ensure TM tag, along with a copy of the documented clinical data and interventions are sent to TM lab once transfusion is discontinued or completed.
- If the transfusion must be discontinued and a transfusion reaction workup is ordered, send the additional following items to TM lab:
  i. Blood work (1 Red top and 1 EDTA (Pink or Lavender top))
     * possible exception for pediatric patient: lab testing to be performed at discretion of Hematopathologist
  ii. Component and administration set (ensure set is safely capped)

Note: AP may also require additional testing such as: blood cultures, chest x-ray, EKG, or urine specimen

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DOSAGE		
Indication	**Specific Criteria**	**Recommendations and Dose**
Bleeding or requiring an invasive or operative procedure within 6 hours	– INR is greater than 1.7 – Not on a vitamin K antagonist (e.g. Warfarin), low molecular weight heparin (LMWH), unfractionated heparin (UFH), direct oral anticoagulant (DOAC) or other anticoagulants	Adult dose: 10–15 mL/kg, e.g. a 75 kg adult would require 3–4 units of FP (250 mL/unit) Pediatric dose: 10–15 mL/kg OctaPlasma dose: 12–15 mL/kg
NOTE: Plasma requirements may increase when a consumptive process is ongoing – Prothrombin Complex Concentrate (PCC) are recommended for adult patients on vitamin K antagonists with an INR greater than or equal to 1.7 and are bleeding or require a surgery/invasive procedure within 6 hours. There is insufficient published evidence to recommend the routine use of PCCs in the pediatric population. *Protamine sulfate is the treatment for prolonged aPTT (activated partial thromboplastin time) from heparin (if the patient is bleeding or will be undergoing an invasive procedure)*		
Treatment of congenital or acquired thrombotic Thrombocytopenic purpura (TTP) and adult hemolytic uremic syndrome (HUS)	Dosing determined by patient's plasma volume **NOTE:** Plasma may also be indicated in therapeutic plasma exchange (TPE) if the INR is initially elevated or becomes elevated after repeated TPEs or when the TPE occurs shortly after a surgical procedure – Cryosupernatent Plasma may be used for this indication – S/D plasma is indicated for patients who require a high volume of transfusions annually because they have TTP, HUS with associated factor H deficiency or clotting factor deficiencies for which specific licensed concentrates may not be readily available (e.g. factor V, factor XI, factor XIII) and who: i. have experienced a severe allergic reaction to FP or ii. have a pre-existing lung disorder or iii. need FP but a blood group compatible product is not available in a timely manner	
Disseminated intravascular coagulopathy (DIC)	– INR greater than 1.7 – Life-threatening bleeding	Adult dose – 10–15 mL/kg, Pediatric dose – 10–15 mL/kg OctaPlasma dose: 12–15 mL/kg
Coagulation factor replacement when a factor concentrate is not available (e.g. Factor II, deficiency) or the factor concentrate is contraindicated (e.g. Factor XI deficiency in a patient with high thrombotic risk)	– NR greater than 1.7 or an aPTT greater than 1.5 times normal – Bleeding or scheduled for an invasive or surgical procedure	Contact the Bleeding Disorder Clinic Adult: 902-473-5612 (after hours – contact the hematologist on call 902-473-2222) Pediatric: 902-470-8752 (after hours – contact the hematologist on call 902-470-8888)

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COMPATIBILITY, STABILITY

- Compatible with NS only

  NOTE: Solutions, other than NS, intended for intravenous use may be used in an administration set with plasma if they have been approved by Health Canada for this use under applicable requirements; or there is documentation available to show that addition of the solution is safe.

- Only viable for four (4) hours from the **time of issue** found on TM tag or time removed from transport cooler
- Do not store unused units in refrigerator or in opened transport cooler. Return to TM

DOSAGE FORMS

- 1 bag (unit); See Unit label or TM tag for exact amount
- Pediatric/neonate doses may be aliquoted into smaller volumes, based on ordered amount

MISCELLANEOUS

- Ensure patient receives a blue transfusion notification card once per calendar year.
- Verification outside of hospital settings will include the Transfusionist and a capable adult.

LIBRARIES

- Searchable Drug Library Document

REFERENCES

- CL-BP-001 Blood Component Utilization in Adults and Pediatrics
- CL-BP-030, IWK-625 Blood Component and Blood Product Administration - Policy and Procedure
- http://www.cdha.nshealth.ca/nova-scotia-provincial-blood-coordinating-program-7
- Octaplasma Product Monograph (2022), found at https://www.octapharma.ca/en/therapies/product-overview
  Canadian Blood Services Circular of Information; Plasma Components (2023), found at
  https://www.blood.ca/sites/default/files/IM-00004_Revision_2.pdf