Government of Newfoundland and Labrador

Department of Health and Community Services
Provincial Blood Coordinating Program

PLASMA GUIDELINES	NLBCP-022

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Overview

Plasma is the aqueous protein liquid in which red blood cells, white blood cells and platelets are suspended. Plasma is comprised of albumin, coagulation factors, fibrinolytics proteins, immunoglobulin and other proteins. Plasma proteins defend the body against infections, maintain blood pressure and immunity, and support clotting mechanisms.

Plasma is available as frozen plasma (FP), cryoprecipitate, and cryosupernatant plasma. Solvent detergent (S/D) plasma is also available, however, it is considered a plasma protein related product (PPRP) and not a blood component.

While S/D plasma and FP have the same clinical indications, there are some differences in the products themselves and the packaging of the product.

FP may be collected from whole blood donation or by apheresis method.

S/D plasma is made from large pools of plasma that undergo pathogen inactivation using a solvent-detergent process resulting in decreased allergic reactions and possibly a reduction in transfusion related acute lung injury (TRALI) reactions.

Policy

1. The Provincial Health Authority (PHA) shall implement policies, processes and procedures for ordering, receipt, handling, storage, distribution, preparation (for administration), and administration of plasma components that comply with the Newfoundland and Labrador Provincial Blood Coordinating Program (NLPBCP) policies and guidelines.
2. S/D plasma and FP are indicated for:
    - 2.1. Bleeding patients or patients undergoing invasive procedures requiring replacement of multiple coagulation factors;
    - 2.2. Patients with clinically significant coagulation abnormalities, requiring massive transfusion;
    - 2.3. Warfarin patients who are bleeding or require an invasive procedure:
        - 2.3.1. Before vitamin K could reverse effects; and
        - 2.3.2. Prothrombin complex concentrates are not available or contraindicated;
    - 2.4. Patients with selected coagulation factor deficiencies or with rare specific plasma protein deficiencies for which a more appropriate alternative therapy is not available; and,
    - 2.5. Therapeutic plasma exchange for patients with thrombotic thrombocytopenic purpura (TTP) or haemolytic uremic syndrome (HUS).
3. Cryosupernatant Plasma is indicated for:
    - 3.1. Therapeutic plasma exchange for patients with TTP or HUS.

3.2. Warfarin patients that are bleeding or requiring an invasive procedure:

3.2.1. Before vitamin K could reverse effects; and

3.2.2. Prothrombin complex concentrates are not available or contraindicated.

4. Cryoprecipitate is indicated for:

4.1. The management of patients requiring fibrinogen when fibrinogen concentrates are either unavailable or contraindicated

5. Contraindications:

5.1. Severe IgA deficient recipients with anti-IgA should receive IgA deficient plasma if they have a prior history of anaphylaxis or severe allergic reaction to transfusion.

5.2. Recipients with known anaphylaxis to plasma components should only receive plasma components under appropriate medical supervision.

5.3. Plasma components should not be used to treat hypovolemia.

5.4. Cryoprecipitate is not recommended as replacement therapy for patients with Hemophilia A or von Willebrand disease.

6. S/D plasma is contraindicated in patients with severe deficiency of protein S. S/D plasma has significantly lower levels of protein S compared to FP.

7. Plasma shall not be transfused past expiration date.

Guidelines

1. The S/D plasma product monograph should be referenced for special instructions.
2. Plasma components and S/D plasma are stored at -18°C or colder.
3. FP, cryosupernatant plasma and cryoprecipitate are thawed in a watertight protective plastic overwrap using gentle agitation in a water bath at 30 to 37°C. Thawing may take 20 to 30 minutes for FP and cryosupernatant plasma, and cryoprecipitate may take up to 10 minutes.
4. Once thawed, FP and cryosupernatant plasma may be stored at 1 to 6°C and transfused within 120 hours. Cryoprecipitate may be stored at 20 to 24°C and transfused within 4 hours.
5. S/D plasma is thawed in a watertight protective plastic overwrap using gentle agitation in a water bath at 30 to 37°C for a minimum of 30 minutes.
6. Once thawed, S/D plasma may be stored for up to five days at 2 to 8°C or up to 8 hours at room temperature, 20 to 25°C.
7. All requests for plasma shall be made through the transfusion medicine laboratory.
8. S/D plasma, FP, and cryosupernatant plasma shall be ABO identical/compatible.

9. Cryoprecipitate recipients can be transfused with any ABO group.
10. Rh (D) type is not relevant for plasma transfusion.
11. Prescribers shall follow plasma dosing guidelines:
    11.1. Recommended dosage of plasma is 10 to 15 mL/kg for adults.
    11.2. For pediatric patients weighing less than 40 kg, the plasma is ordered in mLs/kg.
    11.3. One dose of plasma increases coagulation factors by approximately 30 per cent.
    11.4. Prescribed dose of plasma should be guided by the clinical situation and coagulation results.
12. The number of plasma units prescribed in Massive Hemorrhage Protocols should be the same whether S/D or FP.
13. All records of transfusion shall be retained in the recipient's medical chart in accordance with the facility's retention policy for medical records.

Key Words

Plasma, INR

Supplemental Materials

Canadian Blood Services - Solvent detergent (S/D) treated plasma

References

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