Summary Chart of Blood Components

Component	Major Indications	Action	Special Hazards	Not Indicated For	Rate of Infusion
Whole Blood	*Symptomatic anemia with large volume deficit*	*Restoration of oxygen carrying capacity, restoration of blood volume*	*Infectious diseases; septic, toxic, allergic, febrile reactions; circulatory overload*	*Condition responsive to specific component. Labile coagulation factors deteriorate within 24 hour after collection. Platelets and white cells are not viable in stored blood*	*For massive loss, fast as patient can tolerate, but lesss than four hours per unit*
Red Blood Cells	*Symptomatic anemia*	*Restoration of oxygen carrying capacity*	*Infectious diseases; septic, toxic, allergic, febrile reactions; circulatory overload*	*Pharmacologically treatable anemia, Coagulation deficiency*	*As patient can tolerate but less than 4 hours per unit*
Fresh Frozen Plasma	*Deficit of labile and non labile plasma coagulation factors and TTP*	*Source of labile and non labile plasma factors*	*Infectious diseases, allergic reactions, circulatory overload*	*Condition responsive to volume replacement*	*Less than 4 hours per unit*
Frozen Plasma	*Deficit of non labile coagulation factors*	*Source of non labile factors*	*Infectious diseases, allergic reactions, circulatory overload*	*Deficit of labile coagulation factors or volume replacement*	*Less than 4 hours per unit*

PACKAGE INSERT - CANINE WHOLE BLOOD AND BLOOD COMPONENTS

NOTICE TO ALL USERS

The Package Insert is considered an extension of the blood and component container labels as the space on those labels is very limited.

No MSDS is required for these products. This Package Insert is supplied to conform with applicable government regulations. This document should be kept on file and readily available to personnel involved in the use of this product.

Blood and blood components are biologic products and, in the form of cellular products, living canine tissue intended for use in the treatment of canine patients. Professional judgment based on clinical evaluations determines the selection of components, dosage, the rate of administration and decisions in situations not covered in this general statement.

WARNING. In spite of serological testing, the risk of transmitting infectious agents to the patient is present. Careful donor selection, care, and available laboratory tests do not eliminate the hazard. Also, septic and toxic reactions can result from transfusion of bacterially contaminated blood and components. Such reactions are rare, but may be life threatening. In addition, blood components may contain certain immunizing substances other than those indicated on the label. For example, plasma may contain red blood cells and platelets as well as plasma. Therefore, this Package Insert as a whole or in part cannot be considered or interpreted as an expressed or implied warranty of the safety or fitness of the described blood or blood component when used for their intended purpose. Use of specific blood components as indicated by the individual patients clinical condition is needed to prevent inappropriate transfusion. **Please note** that whole blood is rarely considered an appropriate choice for transfusion. See the section Whole Blood - Indications, below.

Autologous transfusion techniques (such as intraoperative salvage and presurgical donation) should be considered whenever feasible in the perioperative setting, to reduce the risks of disease transmission and immune reactions from homologous donations.

GENERAL INFORMATION

DONORS

Blood and components described in this Package Insert have been collected from canine donors which are maintained in isolated, controlled access colonies. The blood type of each donor is indicated on the product label. The colonies receive on site health care, and all animals are current on immunizations to include: Canine Distemper, Adenovirus type 2, Leptospirosis, Parainfluenza, Canine Parvo Virus, and Rabies.

Blood from donors maintained in controlled access colonies generally carries a lower risk of disease transmission than blood from volunteer donors.

Testing of Donor Blood

Testing of the donor's blood is required before an animal is admitted into the colony as a donor and annually thereafter. All colony donors must test serologically or PCR negative for Canine brucellosis, Ehrlichia canis, Borrelia burgdorferi, Babesia, Anaplasmosis, Rickettsia rickettsia, Hepatozoon, Neorickettsia, Bartonella, hematotropic Mycoplasmas, Leishmania, and Dirofilaria immitis. The label on the container indicates whether the donor is DEA 1 negative, DEA 1 positive, or DEA 4 only.

BLOOD AND COMPONENT LABELING

Labels contain the following information:

1. The Name of the Blood Product.
2. Proper Temperature range for storage.
3. The minimum weight or volume.
4. Company name, address, telephone number and California Biologics registration number (if applicable).
5. The expiration date of the blood component.
6. The donor (serial) identification number.
7. Blood type of the donor.
8. Statement regarding this Package Insert.

GENERAL INSTRUCTIONS FOR WHOLE BLOOD AND ALL COMPONENTS

The following general instructions pertain to Whole Blood and all the components described in this Package Insert.

- The intended recipient must be properly identified before the transfusion is started.
- The plastic blood container must not be vented.
- Blood and blood components must be administered through an appropriate blood filter. A blood administration set with standard (170-260 μ) clot filter is recommended when administering volumes greater than 50 mL. An 18 micron blood filter (HEMO-NATE® blood filter) is recommended for volumes less than 50 mL. Syringe filters not specifically produced and approved for blood should never be used for any product containing red cells.
- Before use, bags of blood or components should be gently agitated to thoroughly mix contents.
- No medications or solutions may be added to or infused through the same tubing with blood or components except 0.9% Sodium Chloride, Injection (USP).
- Lactated Ringer's, Injection (USP) or other electrolyte solutions containing calcium should **NEVER** be added to or administered concurrently with blood or components collected in an anticoagulant containing citrate. All of the products described below contain and are collected into anticoagulants which contain citrate.
- Hemolysis may become evident during the storage of components containing red blood cells. Blood and components should be inspected for bacterial growth. If upon visual inspection the fitness of a component is questioned because of, for example, presence of hemolysis, a significant color change in the contents of the blood bag as compared to the tubing segments, floccular material, cloudy appearance or other problems, the component should not be used. Call Animal Blood Resources at 1-800-243-5759 for further evaluation. A slight pink tinge to the supernatant due to some free hemoglobin may be present and is acceptable for transfusion.
- When thawing frozen products in a water bath, care must be taken to prevent contamination of entry ports. The use of watertight protective plastic over wraps (such as ziplock bags) is recommended.
- Blood and components may be warmed to no more than 37° C during transfusion, if warming is clinically indicated for situations such as hypothermia, blood exchange or massive transfusions.
- Blood components have been prepared by techniques that aid in preserving sterility up to the time of expiration. If the container is entered in a fashion that could contaminate the contents of the container for any reason the component expires 4 hours after entry if maintained at room temperature (20° - 24° C), or 24 hours after entry if refrigerated (1° - 6° C).
- Unless otherwise indicated by the patient's clinical condition, the rate should be slow, no greater than 0.11 mL / pound of body weight for the first 30 minutes of the transfusion. The patient should be observed during this period since some life threatening reactions occur after the infusion of only a small volume of incompatible blood. If a transfusion reaction occurs, the transfusion should be discontinued immediately and appropriate therapy initiated. The infusion should not be restarted.
- Completion of the transfusion should be prior to component expiration or within 4 hours of warming to room temperature, whichever is sooner. If blood or components cannot be infused in 4 hours, they should be divided into aliquots before reaching 6 degrees C and stored appropriately in the refrigerator until needed.
- A crossmatch should be conducted before every transfusion.
- The blood type of both the donor and the recipient should be known before transfusing whenever possible. When the blood type of the recipient is not known, only blood from type DEA 1 NEGATIVE donors should be given. First time transfusions with donors and recipients of unknown blood types should **NEVER** be considered safe.
- Blood transfusions should never be considered safe, even under optimum conditions, and should not be given unless there is no other acceptable treatment

SPECIFIC INSTRUCTIONS FOR WHOLE BLOOD AND COMPONENTS

WHOLE BLOOD

Description

Whole Blood contains the red blood cells and plasma components of blood. Platelets and white blood cells in stored blood are nonviable. A 125 mL (single) Unit of Whole Blood with anticoagulant has a volume of approximately 125 mL ± 10% with a Packed Cell Volume (PCV) of 35 - 50% ±. This assumes a donor PCV of 40 - 55% ±. Whole blood also comes in 250 mL (double) Unit of approximately 250 mL ± 10% and 500 mL (Quad) Units of approximately 500 mL ± 10%. The volume of whole blood (within 10%) can be found on the label. Currently used anticoagulant solutions for the collection of Whole Blood include the anticoagulants Citrate Phosphate Dextrose Solution, USP (CPD); Citrate Phosphate Dextrose Adenine Solution (CPDA-1); and Citrate Phosphate Double Dextrose Solution (CP2D).

The refrigerated shelf life of the Whole Blood is determined by the type of anticoagulant used: CPDA-1 provides a shelf life of 35 days, CPD and CP2D give a shelf life of 28 days. This expiration date is indicated on the product label. Product Whole Blood, Canine is collected in CPDA-1 unless otherwise stated.

Actions

Whole Blood provides red blood cells to carry oxygen to tissues. It also is a blood volume expander and a source of proteins with oncotic and certain non labile coagulation properties.

Indications

Whole Blood is indicated only for those patients who have a symptomatic deficit in oxygen carrying capacity combined with hypovolemia of sufficient degree to be associated with shock. If only the former is present, the component of choice is Red Blood Cells. Whole Blood cannot be considered a source of viable platelets, white cells or of therapeutic levels of labile coagulation Factors V and Vlll.

Contraindications

Depending upon the condition of the patient, transfusions containing red cells may not be necessary even with low hemoglobin concentration. Do not use Whole Blood or other red blood cell components if anemia can be treated with specific medications such as iron, vitamin B12, or folic

CANINE WHOLE BLOOD AND BLOOD COMPONENTS

acid, and if the clinical condition of the patient permits sufficient time for these agents to promote erythropoiesis.

Do not use Whole Blood when blood volume can be safely and adequately replaced with other volume expanders such as 0.9% Sodium Chloride, Injection (USP) or Lactated Ringer's, Injection (USP).

Do not use Whole Blood to correct coagulation deficiencies when they can be better treated by appropriate components.

Side Effects and Hazards

The principal side effects and hazards of Whole Blood are:

Hemolytic transfusion reactions usually occur when donor red blood cells and recipient plasma are incompatible. Undetected serologic incompatibilities can cause transfusion reactions, but most immediate reactions occur when there is a DEA 1 incompatibility. To reduce the risk of transfusion reactions a major and minor crossmatch should be conducted before every transfusion, including first transfusions. This is true even if the patient has been crossmatched to a repeat donor in the past or the donor and recipient are the same blood type.

The more severe transfusion reactions are characterized by shock, fever, dyspnea, jaundice, cardiac arrhythmias, erratic respiration, salivation, hemoglobinuria, edema, disseminated intravascular coagulation (DIC), abnormal bleeding, vomiting, and urticaria. These reactions may result in death. In anesthetized patients, hypotension and evidence of DIC may be the first indications of a transfusion reaction. Hemoglobinemia, hemoglobinuria and subsequent hyperbilirubinemia are usually detectable. Renal failure may ensue. The transfusion must be stopped. Treatment includes management of shock and the judicious administration of fluids and diuretics.

Delayed hemolytic reactions may also occur, usually in patients with antibodies undetectable at the time of transfusion. This type of reaction may mimic autoimmune hemolytic anemia with a positive direct antiglobulin test. The signs may include fever, hemoglobinuria, hyperbilirubinemia, and/or a progressive unexplained fall in hemoglobin 4 - 14 days after transfusion or continued anemia despite transfusion therapy. The usual course of delayed reactions is benign and requires no treatment. Rarely, delayed transfusion reactions may be severe and fatal.

Some uncommon causes of acute non-immunologically mediated hemolysis that occur in patients include:

a. administration of a hypotonic fluid

b. bacterial infection of the patient or contamination of the donor blood

c. acute hemolytic anemia from any cause

d. improper handling of the blood, such as overheating or freezing.

e. administration of hemolysed blood. When hemolysed blood is transfused, the patient's course is usually benign, although hemoglobinuria, chills, DIC, renal failure and fever may occur. Treatment for the infrequent severe reaction are the same as those for an immediate hemolytic transfusion reaction.

Transmission of infectious disease may occur in spite of careful donor selection and testing.

Bacterial contamination of blood and components is rare. However, the presence of gram-negative bacilli can cause severe endotoxin reactions, including shock, and rarely, death. When a blood recipient experiences chills, high fever or hypotension during or immediately after the transfusion, the possibility that the transfused product may have been bacterially contaminated should be considered. Septic and toxic reactions may be life threatening, and management must be aggressive. Treatment should be initiated immediately after the collection of recipient blood samples for culturing. Treatment may include broad spectrum antimicrobials, vasopressors to maintain blood pressure and urinary flow, and intravenous fluid therapy to maintain fluid and electrolyte balance.

Alloimmunization of the recipient to red blood cell, white blood cell, platelet and protein antigens may be a consequence of transfusion. This complication is usually not seen until the need for a subsequent transfusions and can result in severe transfusion reactions.-All blood products **MUST BE CROSSMATCHED** to reduce the risk of serious transfusion reactions due to alloimmunization.

Febrile reactions may occur rarely and are usually caused by antibodies that agglutinate leukocytes.

Allergic reactions manifested by urticaria, wheezing or other angioedematous reactions may occur rarely in recipients. The exact cause of these reactions is unknown; however, they are less frequent when Red Blood Cells are used instead of Whole Blood and may be prevented in patients with a prior history of such reactions by premedication of the patient with an antihistamine. Anaphylactic reactions manifested by bronchiospasm, dyspnea and pulmonary edema may occur in rare individuals. Immediate treatment with adrenaline and corticosteroids is indicated. These patients are not good candidates for further transfusions.

Circulatory overload reactions manifested by pulmonary edema occur when excessive volume is administered. This is a particular risk in older patients, in small patients and in patients with chronic severe anemia when there is decreased red blood cell mass and increased plasma volume. Immediate treatment for pulmonary edema should be instituted. Use of Red Blood Cells and careful monitoring of the transfusion volume will minimize the occurrence of these reactions due to the following:

a. Red cells have a much higher PCV than an equal volume of whole blood, thus providing the same result while greatly reducing the fluid volume required

b. Removal of the plasma portion of blood prior to transfusion of red cells reduces metabolites and antibodies present in the plasma which may be responsible for adverse reactions.

c. An equal fluid volume of Red Cells has a reduced level of Sodium compared to Whole Blood.

Iron overload with resultant hemochromatosis is rare but may occur in patients given repeated transfusions over long periods of time.

Clinically significant depletion of coagulation proteins and platelets is a very rare complication of massive transfusion with whole blood. (defined as replacement of more than one blood volume in less than 24 hours). Careful monitoring of patients reveals that reduction of clotting factors below hemostatic levels is unusual but dilutional loss may occur. Treatment with specific components to replace reduced coagulation factors may be useful when bleeding is related to their depletion. While whole blood contains non labile coagulation factor in the plasma portion, Labile coagulation factors and platelets are no longer available. If excessive bleeding occurs subsequent to a transfusion, the possibility of a hemolytic reaction complicated by DIC should be considered.

Micro aggregates consisting of fibrin, white cells and platelets may develop during storage of blood. The smallest of these particles will not be retained in a standard clot filter (170 - 260 μ).

Metabolic complications of transfusions can occur when very large amounts of blood (equal to or greater than the patient's blood volume in a few hours) are rapidly infused, or when the patient has severe liver or kidney disease. Following are examples of metabolic complications:

a. Hypothermia with the risk of cardiac arrhythmia may occur in rapid, massive transfusion with cold blood or when cold blood is administered through a central venous pressure line. Hypothermia may complicate other metabolic changes and offset oxygen release from hemoglobin. Warming the blood during its passage through the transfusion set to no more than 37° C can prevent this complication.

b. Citrate toxicity due to complexing of ionized Calcium by the anticoagulant in the blood is very rare. The calcium stores of the body are large, and citrate anticoagulant is usually rapidly metabolized. Symptoms can range from muscle tremors to cardiac arrhythmia, and even cardiac arrest. In the absence of underlying pathology contributing to hypocalcemia, most citrate reactions require no treatment other than slowing or discontinuing the transfusion.

c. Acidosis, which may occur initially during massive transfusion, rarely requires treatment. The citric acid is rapidly converted to pyruvate and bicarbonate, with subsequent metabolic alkalosis.

Dosage and Administration

Whole Blood should not be used unless donor and recipient are of the same blood type, the recipient is blood typed and known to be DEA 1 positive or the donor has been blood typed and is known to be DEA 1 negative. Crossmatching should be done even when donor and recipient have been blood typed and are known to be of the same blood type. The above criteria should always be met unless withholding blood might result in loss of life. The volume of a transfusion depends on the clinical situation. One mL of whole blood contains enough Red Blood Cells to raise the PCV approximately 1 percentage point per pound of body weight.

The rate of transfusion after an initial slow drip (0.11 mL per pound of body weight over a 30 minute period) should be as fast as tolerated. In an animal with a normal state of hydration, whole blood may be infused at a rate of 10 mL per pound of body weight per 24 hour period. This rate may be significantly increased in hypovolemic patients. Due to the wide range of infusion rates, close monitoring of the patient is essential to determine the rate which is appropriate for that individual, and this rate may need to be adjusted accordingly throughout the transfusion. If the patient requires a slow transfusion rate, then consideration should be given to the transfusion of Red Blood Cells rather than Whole Blood.

Components of Whole Blood are described below.

RED BLOOD CELLS

Description

The component Red Blood Cells is prepared by centrifugal or gravitational separation of the red cells from the plasma. Red Blood Cells are collected in CPD or CP2D and stored on Adenine-Saline Solution to extend shelf life. A unit of Red Blood Cells on AS-3 solution has a PCV of 60 - 75% ±. This assumes a donor PCV of 40 - 55% ±. A Single Unit contains minimum 100 mL+ of Red Blood Cells in addition to 50 mL of AS, a Double Unit contains minimum 200 mL+ of Red Blood Cells in addition to 100mL of AS. **This extra fluid volume should not be included when determining the volume of RBCs needed for transfusion, but must be considered as part of the patient's total fluid requirement.** Some platelets and or white blood cells may have been removed during processing and are nonviable due to refrigerated storage.

A-S solutions consist of glucose, adenine and sodium chloride in water for injection (USP). Additive Solutions formula one (AS-1) and five (AS-5) also contain mannitol as a red blood cell stabilizing agent. Adenine-Saline formula three (AS-3) contains additional citrate and phosphate and does not contain mannitol.

Red Blood Cell components may be prepared from Whole Blood collected in CPDA-1, CPD or CP2D, but unless otherwise noted, ABRI redcells are collected in CPD or CP2D. RBCs which are not suspended on A-S solution have the same shelf life as the whole blood from which they are removed: CPDA-1 provides 35 days, CPD and CP2D provides 21 days. Red Blood Cells suspended on Adenine-Saline solution have a shelf life of 42 days and are so identified on the label. The expiration date is indicated on the label.

Actions

This component increases the oxygen carrying capacity of the recipient's blood by increasing the circulating red blood cell mass.

Indications

Red Blood Cells is the component of choice for virtually all patients with a symptomatic deficit of oxygen carrying capacity. This component may be used to help restore blood volume following significant hypovolemia without significant red cell mass deficit.

Contraindications

Do not use Red Blood Cells when anemia can be corrected with specific medications. See "Whole Blood, Contraindications."

Side Effects and Hazards

Side effects and hazards of Red Blood Cells (including disease transmission, bacteremia or endotoxemia, and hemolytic transfusion reactions) are similar to those for Whole Blood. However, the incidence of allergic reactions, circulatory overload and metabolic complications is lower because removing plasma reduces volume and the quantity of metabolites and antibodies. The risk of disease transmission remains the same.

If A-S solution containing mannitol is used, Red Blood Cells contain 0.375g of mannitol per Double (300 mL) unit. The amount of mannitol in approved additive solutions is far below that used to achieve a diuretic effect. It is unlikely that any side effects of the mannitol would be observed. Mannitol currently is not present in ABRI Red Cells.

Dosage and Administration

The dosage and administration of Red Blood Cells are similar to those for Whole Blood. (See "Whole Blood, Side Effects and Hazards, Circulatory Overload Reactions.") Due to the addition of A-S solution to the red cells, additional dilution with 0.9% Sodium Chloride, Injection (USP) to improve flow is not needed. Do not add lactated ringers or any other fluids.

PLASMA COMPONENTS

FRESH FROZEN PLASMA

Description

Fresh Frozen Plasma (FFP) is separated and frozen within 8 hours of collection of whole blood. **A Unit of Fresh Frozen Plasma contains the labile plasma coagulation Factors V and VIll (including vWf).** Platelets, if present, are not viable. A single unit contains approximately 120 mL to 145 mL ± of Fresh Frozen Plasma. A double unit contains approximately 240 - 265 mL ± of Fresh Frozen Plasma. A mini unit contains approximately 60 mL to 90 mL ± of Fresh Frozen Plasma. These ranges are due to differences in donor PCV's.

Actions

FFP contains plasma proteins including all coagulation factors both labile and non-labile.

Indications

Fresh Frozen Plasma is indicated for use in control of bleeding in patients who require replacement of labile plasma coagulation Factors (V and VIII including vWf) when simultaneous blood volume expansion is required. When blood volume expansion is not required, Lyophilized Cryoprecipitate may be used. FFP may also be used in cases where Frozen Plasma is indicated. FFP is indicated for patients with thrombotic thrombocytopenic purpura (TTP) when platelet inactivation is due to an absence of vWF. **Fresh Frozen Plasma does not contain platelets.**

Contraindications

Do not use FFP when coagulopathy can be corrected more effectively with specific therapy, such as Lyophilized Cryoprecipitate, vitamin K, etc. Do not use FFP when blood volume can be safely and adequately replaced with other volume expanders such as 0.9% Sodium Chloride, Injection (USP) or Lactated Ringer's Injection (USP).

NOTE: Lyophilized Cryoprecipitate not available in the state of California.

Side Effects and Hazards

As described for Whole Blood, side effects and hazards may include febrile, hemolytic and allergic reactions; circulatory overload; and transmission of infectious diseases. If massive volumes of plasma are used, citrate toxicity, hypothermia and other metabolic problems may occur.

Antibodies in the plasma may react with the recipient's red cells, causing a positive direct antiglobulin test, possibly hemolysis and, rarely, noncardiogenic pulmonary edema.

Dosage and Administration

A crossmatch should always be performed before plasma is administered. Plasma should be DEA 1 compatible with the recipient's red cells, from DEA 1 negative donors or produced in a manner that insures no red cell contamination. Plasma produced from whole blood collection cannot be guaranteed free of red cells. Unless labeled otherwise, all ABRI plasma comes from DEA 1 negative donors.

The volume transfused depends on the clinical situations and patient size. Some literature recommends 2 mL to 5 mL per pound of body weight up to 20 mL per pound of body weight. Dosage should be guided by close patient monitoring. Do not use the Plasma if there is evidence of container breakage or of thawing during storage. Plasma may be thawed at a temperature between 30° and 37° C using gentle agitation. Use a watertight protective plastic overwrap (such as a ziplock bag) if a waterbath is used. Microwaves are not recommended for thawing plasma.

Fresh Frozen plasma thawed in a refrigerator may be refrozen, but should be relabeled as frozen plasma. Plasma thawed and refrozen in this way has an expiration date of five years from the date of collection.

FROZEN PLASMA

Description

Frozen Plasma consists of the anticoagulated clear portion of blood that is separated by centrifugation or sedimentation no later than 5 days after the expiration date of the Whole Blood. Frozen Plasma may be stored refrigerated for up to 5 days after the expiration date of the whole blood from which it is removed. This freeze by date is indicated on the plasma carton. Frozen Plasma comes in three sizes: a mini unit which contains 50 - 90+ mL of Frozen Plasma, a standard unit which contains approximately 120 - 145 mL ± of Frozen Plasma and a double unit which contains approximately 240 - 265 mL ± of Frozen Plasma. These ranges are due to differences in donor PCV's. All non labile coagulation factors are present.

Plasma components for transfusion may be prepared from Whole Blood collected in all approved anticoagulant solutions except Heparin Solution.

Actions

Frozen Plasma contain plasma proteins, including nonlabile clotting factors such as fibrinogen, Factor VII and Factor IX. Frozen Plasma does not contain the labile clotting Factors V, VIII and vWF. Frozen Plasma does not contain platelets.

Indications

These components are indicated for the treatment of non abile clotting factor deficiencies, such as Warfarin poisoning, and plasma protein deficiencies. Note: Plasma is not the first treatment of choice for protein replacement or volume expansion. See contraindications.

Contraindications

Do not use Frozen Plasma when coagulopathy can be corrected more effectively with specific therapy, such as vitamin K.

Do not use Frozen Plasma for replacement of labile coagulation factors such as Factors V and Vlll, including vonWillebrand factor (vWf).

Do not use these components when blood volume can be safely and adequately replaced with other volume expanders such as 0.9% Sodium Chloride, Injection (USP) or Lactated Ringer's, Injection (USP).

Side Effects and Hazards

The side effects and hazards of FP are similar to those for Frozen Plasma.

Dosage and Administration

The dosage and administration of FP are the same as for Fresh Frozen Plasma. FP should be used as soon as possible but no more than 24 hours after thawing (stored at 1° - 6° C) when administered as a source of labile coagulation factors.

Frozen plasma thawed in a refrigerator may be refrozen.

REFERENCES

A reference list is available upon request from Animal Blood Resources International.

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