11 FRESH BLOOD COMPONENTS

11.2 FRESH FROZEN PLASMA (FFP) AND CRYOPRECIPITATE

FRESH FROZEN PLASMA (FFP)

- FFP is separated from whole blood and frozen within 18 hours of collection. FFP contains all coagulation factors including Factor VIIIc >0.7 IU/mL.
- Adult FFP volume 150-300mL. Paediatric FFP volume 75-150mL.
- Stored for 1 year at below –25°C in a Blood bank monitored freezer.
- Thawed at below 41°C in a monitored Blood Bank thawing bath for immediate infusion.

FFP DOSE AND ADMINISTRATION

- Dose depends on clinical situation. The suggested therapeutic dose is 10-15mL/kg.
- Transfuse immediately after thawing and complete within 4 hours.

FFP INDICATIONS

- Reversal of warfarin in presence of life-threatening bleeding. Use in addition to vitamin-K-dependent concentrates.
- TTP
- Bleeding or abnormal coagulation in:
  - Acute DIC.
  - Massive transfusion or cardiac bypass.
  - Liver disease.
  - Coagulation inhibitor deficiencies.

FFP CONTRAINDICATIONS

Not generally considered appropriate:

- When coagulopathy can be corrected more effectively with specific therapy such as Vitamin K, cryoprecipitate, Factor VIII or other specific factor concentrate.
- For volume replacement when other volume expanders can be used.
- For plasma exchange procedures.
CRYOPRECIPITATE (CRYO)

CRYO DESCRIPTION
- Cryo is from FFP after thawing at 1-6°C and recovering the precipitate which is then refrozen.
- Cryo contains most of the Factor VIII, Fibrinogen, Factor XIII, vWF and fibronectin from the FFP. Volume is 10-40mL, Fibrinogen >140mg/unit, FVIIIc >70 IU/unit.
- 1 year at below −25°C in a Blood Bank monitored freezer.
- Thawed at below 41°C in a monitored Blood Bank thawing bath for immediate infusion.

CRYO DOSE AND ADMINISTRATION
- Dose depends on clinical situation and patient size, and should be guided by laboratory assays of coagulation factors. A common dose for Fibrinogen replacement is 1-1.5 units per 10kg patient body weight each dose.
- Transfuse immediately after thawing and complete within 4 hours.

CRYO INDICATIONS
- Treatment of fibrinogen deficiency or dysfibrinogenaemia when there is clinical bleeding, an invasive procedure, trauma or acute DIC.

CRYO CONTRAINDICATIONS
- Cryoprecipitate should not be used for haemophilia, von Willebrand’s disease or deficiencies of factor XIII or fibronectin unless alternative therapies are unavailable.

ORDERING FFP AND CRYO
Telephone order to Blood Bank or by completed Transfusion request form. ABO compatibility required.

- FFP and cryoprecipitate may be administered by Gravity or Plum A+ Pump using an approved blood administration set with 170-200 micron filter designed to remove large aggregates formed during storage.
- Commence infusion within 30 minutes of removing from Blood Bank.
- Sets should be used and primed according to the manufacturer’s instructions.
- The PLUM A+ line B or secondary infusion line contains a 200 micron filter which is appropriate for use with fresh blood products.
- For neonates and infants, special paediatric giving sets or screen filters for administration by syringe may be used provided they incorporate a 170-200 micron filter.
- Transfusion may be as fast as tolerated and FFP is usually infused over 30-60 minutes and cryoprecipitate is usually infused over 30 minutes.
- As for all fresh blood products - Transfusion must be COMPLETE within 4 hours.

PATIENT MONITORING
Severe reactions are most likely to occur within the first 15 minutes and patients MUST be closely observed during this period. It is preferable that the patient be located in an area where they can be closely observed by clinical staff throughout the transfusion.

Take observations as for all fresh blood products
- Baseline TPR and BP
- TPR and BP at 15 minutes and then hourly until completion.
- TPR and BP on completion.
Patients must be monitored and any suspected problem must be dealt with quickly and efficiently. If you suspect a transfusion reaction:

- **STOP** the transfusion
- Inform Medical Officer
- CODE BLUE if necessary
- Inform the Blood Bank
- Check Patient ID, labels and blood packs for discrepancies
- Monitor vital signs every 15 minutes until stable.
- **Refer to Section 10 The Management and Reporting of Adverse Events**

**DOCUMENTATION**

A record should be kept in the patient’s history of the following

- The date of infusion
- Patients observations and general condition during the infusion
- Amount given
- The bag sticker should be placed on the Transfusion Medicine Record sheet KEMH MR735 and the start and stop times and checking signatures should be completed in the relevant boxes.

**REFERENCES**

The Australian Blood Service (ARCBS) Blood Component Information


The ARCBS Blood Component Circular of Information

