

## 11 FRESH BLOOD COMPONENTS

Date Issued: January 2005  
Date Revised: July 2011  
Review Date: July 2013  
Authorised by: KEMH Transfusion Committee  
Review Team: KEMH Transfusion Committee

11.3 Platelets  
Section 11  
Transfusion Medicine Protocols  
Women's & Newborn Health Services  
Perth Western Australia

### 11.3 PLATELETS – SINGLE DONOR APHERESIS LEUCOCYTE DEPLETED (PSD)

#### DESCRIPTION

- Platelets suspended in plasma with a volume >100mL and a Platelet count >240 x 10<sup>9</sup>/unit.
- pH at expiry is between 6.8 -7.4. Leucodepleted platelets have a leucocyte count of <1.0 x 10<sup>6</sup>/unit.

#### INDICATIONS

#### PROPHYLAXIS

- Bone marrow failure with count <10 x 10<sup>9</sup>/L or <20 x 10<sup>9</sup>/L in presence of risk factors such as fever, antibiotics and sepsis.
- Surgery/invasive procedure to maintain count >50 x 10<sup>9</sup>/L or >100 x 10<sup>9</sup>/L for high-risk surgery (e.g. neurosurgery, ocular, etc).
- Inherited or acquired platelet function disorders depending on clinical features and setting.  
Note: platelet count is not a reliable indicator.

#### THERAPY

- Bleeding due to thrombocytopenia.
- Massive haemorrhage/transfusion in presence of thrombocytopenia and/or functional abnormalities. May be appropriate <50 x 10<sup>9</sup>/L or <100 x 10<sup>9</sup>/L in presence of diffuse microvascular bleeding.

#### CONTRAINDICATIONS

- Not generally considered appropriate for treatment of:
  - Immune mediated platelet destruction
  - Thrombotic thrombocytopenic purpura
  - Haemolytic uraemic syndrome
  - Drug-induced or cardiac bypass thrombocytopenia without haemorrhage

#### SHELF LIFE/STORAGE

5 days at 20-24°C when stored under continual gently agitation on a platelet mixer in Blood Bank.  
**Platelets must not be refrigerated.**

## ORDERING

- Platelets are ordered through the Blood Bank. A telephone order is suitable in the first instance but a completed Transfusion Request Form is also required.
- Platelets are not routinely stocked in the Blood Bank and have to be shipped from the ARCBS. Therefore they are usually not immediately available and should be pre ordered for booked procedures or visits.
- Platelets are selected on an identical ABO and Rh D compatibility basis. However ABO or Rh D non identical platelets may be used in an emergency if identical platelets are unavailable.

## DOSE AND ADMINISTRATION

- Dose depends on clinical situation. One PSD will raise the platelet count of a 70kg adult by 20-40,000/ $\mu$ L and 18kg child by 80,000/ $\mu$ L
- Peripheral intravenous access should be sufficient to maintain an adequate rate for the transfusion without risk of haemolysis. 18-20 Gauge is recommended for adults and 22-24 Gauge or larger is recommended for paediatric patients.
- Platelets 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. 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.
- Use a fresh blood giving set as platelets must NOT be infused through a set that has already been used for red cells as this may result in a loss of platelet yield in the filter.
- Commence infusion within 30 minutes of removing from controlled 2- 6°C storage.
- Sets should be used and primed according to the manufacturer's instructions.
- 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 platelets are usually infused over 30-60 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.

**FOR FULL INFORMATION ON ADMINISTRATION, PATIENT MONITORING AND DOCUMENTATION PLEASE SEE SECTION 7, SECTION 8 AND SECTION 9**