

## 7 ADMINISTRATION OF BLOOD COMPONENTS

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7.4 Infusion  
Section 7  
Transfusion Medicine Protocols  
Women's & Newborn Health Services  
Perth Western Australia

### 7.4 INFUSION

Blood components must be set up for infusion within 30 minutes of:

- Issue from the Blood Bank.
- Removal from Satellite blood fridge or
- Removal from ARCBS blood transport box.

Components must be mixed thoroughly by gentle inversion before use. Infusion must be *completed* within 4 hours.

#### CO ADMINISTRATION

If premedications are to be ordered they should be administered sufficiently in advance to allow for effectiveness. **CAUTION** Medications must not be added to blood products or a side line of a blood 'giving set'. Medications may interfere with the anticoagulant solution in the pack or cause unpredictable damage to the blood product. TPN or crystalloid and colloid solutions containing calcium may neutralise the anticoagulant resulting in clotting. Dextrose solutions and hypotonic saline may cause red cell lysis. Cyclosporin co-administration is also contraindicated.

**The only exception is the following as it has been shown not to adversely affect red cells:**

Co administration of morphine, pethidine or ketamine diluted **ONLY** in normal saline (as for patient controlled analgesia or continuous side arm infusion) incorporating a non reflux valve.

**If medication needs to be given:**

**Either**

- Use or insert another cannula for drug administration.

**OR**

- Stop the transfusion
- Flush the line with normal saline using the injection port closest to the patient. Ensure the line is clamped above the injection port.
- Administer the medication.
- Flush the line again with normal saline, Unclamp the line
- Restart the transfusion

This must not result in the transfusion exceeding 4 hours. The line should not be physically disconnected and reconnected mid transfusion.

The only fluids that can be given concurrently through the same IV device as a red cell transfusion are:

- Normal saline (0.9% USP)
- 4% Albumin.
- Plasma protein fractions or

- ABO-compatible plasma.

## INFUSION DEVICES

Staff using infusion devices must demonstrate knowledge and competence in their use.

### Plum A Pump

At KEMH an Abbot Plum A infusion pump may also be used to administer Blood Products. The approved tender electronic infusion pumps have been verified as safe to use for this purpose according to the manufacturer's instructions. They should only be used to administer blood products using a compatible blood administration set with a 170 - 200 micron filter. The PLUM A+ line B, or secondary infusion line, contains a 200 micron filter which is appropriate for use with fresh blood products. This blood giving set is essential as it removes clots and large aggregates formed during storage.

The pressure setting should never exceed 300mm/Hg.

Platelet products may also be administered using the Abbott Plum pump. As with all fresh blood products a blood administration set incorporating a 170-200 micron filter *must* be used. This *must* be a fresh set as platelets should not be transfused through a line after blood as this may result in the retention of platelets in the used filter. However, blood can be transfused through the line after platelets.

***N.B. Stem Cell and Granulocyte preparations are exceptions to this rule and MUST be infused via gravity.***

### External Pressure Devices

External pressure devices make it possible to administer blood very quickly. These should only be used in an emergency situation and with a large gauge venous access needle. It should exert pressure evenly over the entire bag and must never exceed 300mm Hg of pressure.

### Syringe Drivers

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.

The use of syringe drivers presents problems of sterility and storage. When blood is removed from a primary pack the risk of mis-labelling and patient identification is increased. As an alternative, the use of T-taps allows continuous attachment of the syringe to the primary pack. Syringe configurations should ensure that blood components pass through a 170-200 micron blood filter. They should be single use only and have Leur-lock connections. The syringe **MUST** have a label attached having identical donor/patient information as the original pack from which the product was drawn and showing the date and time of preparation and expiry date and time.

### Changing Sets

For fresh blood products the transfusion sets must be changed at least every 8 hours to reduce the risks of bacterial contamination or earlier if flow rates are compromised. The filter traps cell debris and aggregates resulting in a high protein concentration, which promotes rapid bacterial growth at room temperature. Filters should be utilised according to manufacturer's instructions.

## EMPTY BAGS AND BOTTLES

Empty blood component bags/bottles should be discarded according to the hospital policy for disposing of clinical waste. There is no requirement to return used bags to the Blood Bank **unless** a suspected transfusion reaction has occurred. (See Section 10 The Management and Reporting Of Adverse Events)