

## Infusion of Fresh Haemopoietic Progenitor Cells (HPC)

### 1. PURPOSE

This applies to the infusion of fresh, both related (allogeneic and syngeneic) and matched unrelated donor (MUD) HPC derived from either Peripheral Blood apheresis (HPC-A) or Bone Marrow harvest (HPC-M).

### 2. ACTIONS

- **For ABO identical or group compatible HPC product:**
  - No premedication is required.
  - Normal blood transfusion observations are required.
- **For Minor ABO mismatch HPC product:**
  - Plasma depleted product is usually transfused uneventfully.
  - Normal blood transfusion observations are required.
- **For Major ABO mismatch HPC product:**
  - Red Blood Cell depleted product. The RMO must be present in the room during the first 10 minutes of infusion and on the ward for the first hour of infusion.
  - Pre Medication Order –Hydrocortisone 25-100mg IV(2-4hours prior to infusion)antihistamine-Promethazine(Phenergan) O/IV and Paracetamol (½-1hour prior to infusion).
  - IV Hydration Order – 0.9% NaCl (Normal Saline) 125ml/m<sup>2</sup>/hr for 4hours pre infusion.  
Hydration should continue for 12- 24hours, post HPC infusion, depending on the presence of haemoglobinuria, consult Transplant Physician.
  - Additional observations required at 5minutes x3, 15minutes x3, ½hourly intervals during infusion.

#### 2.1 Day Prior to Infusion (Transplant Day -1)

- Confirm with the Laboratory (**XT5832**) the anticipated transplant time.
- Confirm with Blood Bank (**XT 5829**) that there is a valid recipient specimen suitable for crossmatch, if not, a specimen and request **MUST** be completed and sent to Blood Bank.
- The Transplant Physician or delegate must complete an order for infusion of HPC, and as required, pre-medication on patient's Medication Chart (MR690/A) and hydration on their Complex IV Orders and Fluid Balance Chart (MR55C)
  - Infusion Rate of HPC – Commence slow 10-20ml/hr, for 15minutes, observe, increase to desired rate over next ½ hour.

#### **ABO COMPATIBILITY / INCOMPATIBILITY MUST BE CLEARLY INDICATED**

#### 2.2 Day of Infusion (Transplant Day 0)

- Confirm with the Laboratory transplant time. The Laboratory will continue to update about the HPC product availability.

#### 2.3 2-4 hours Prior to Infusion

- Explain the procedure to the patient and parent / caregiver.
- Prepare patient's catheter for infusion.
- Record baseline observations (Temperature, Pulse, Respiration, Blood Pressure and SaO<sub>2</sub>).

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- **HPC product is a major ABO mismatch:**
  - Commence premedication and IV hydration as chartered.
  - Ensure that Adrenaline, Oxygen and emergency trolley are available.
  - Ensure that the Ward RMO is present with the patient during the first 10 minutes and available on the ward for the 1<sup>st</sup> hour of the infusion.

### 2.4 Infusion (NOTE assess and report any adverse reaction to the Transplant Physician or delegate)

- Perform patient ID and HPC product checks according to Blood Administration Procedure.
- Commence HPC product infusion slowly commensurate with the recipient weight for 15minutes. Monitor vital signs **every 5minutes**, if stable after the 15minutes of slow infusion, increase the rate at 10 minute intervals to the desired infusion rate over the next ½hour, as specified by the attending Ward RMO. For ABO identical, compatible and minor mismatch, record observations as per normal blood transfusion.
- For **ABO incompatible HPC** product infusion monitor vital signs;
  - Every 5minutes for the first 15minutes, then,
  - Every 15minutes for next 45minutes, then,
  - Every 30minutes for the remainder of the HPC product infusion.
- Assess for **ANY** adverse reaction. Slow the infusion rate if patient's Blood Pressure falls or tachycardia develops, inform the Ward RMO. If necessary give adrenaline, decrease HPC-M. Give bolus Normal Saline-10ml/Kg for hypotension. Further hydrocortisone and antihistamine may be given if there is an inadequate response.
- In the event of a severe reaction, consult Transplant Physician. ICU transfer may be necessary.
- The nurse **MUST** be at the bedside for at least the first hour of the infusion.
- **HPC PRODUCT MUST NOT BE TAKEN DOWN AND DISCARDED.** Record time of completion of HPC product infusion. Ensure that **ALL** bags of the HPC product are transplanted as charted.

### 2.5 Post Infusion(NOTE assess and report any adverse reaction to the Transplant Physician or delegate)

- Continue monitoring vital signs every hour for 4hours, then as routine.
- Continue IV hydration as charted. Test first void of urine for haemoglobin (related to haemolysis of red blood cells).
- Document and assess development and resolution of Haemoglobinuria.
- Encourage frequent voiding and **report oliguria** with UOP <2/ml/kg/hr.
- Assess patient for delayed reactions, ie renal failure, infection. **REPORT.**

## 3. REFERENCE DOCUMENT

Transplantation of Fresh Haemopoietic Progenitor Cells. CL-P-002