TRANSFUSION MEDICINE PROTOCOLS

Platelets - Prescription and Administration

This document should be read in conjunction with the Disclaimer

Contents

Description

- Platelets single donor (PSD) suspended in plasma with a volume 180 ± 11 mL (mean volume ± 1 standard deviation) and a platelet count >200 to <510 x 10^9/unit.
- pH at expiry is between 6.4 - 7.4.
- Leucodepleted platelets have a leucocyte count of <1.0 x 10^6/unit.

Indications

Clinical Situation	Indication for Platelet (Plt)Transfusion
Bone marrow failure	**Plt <10 x 10^9/L** if no other risk factors for bleeding (see below) **Plt <20 x 10^9/L** in presence of risk factors such as fever, antibiotics and sepsis.
Surgery/invasive procedure	**Plt Maintain >50 x 10^9/L** or >100 x 10^9/L for high-risk surgery (e.g. neurosurgery, ocular, etc).

Clinical Situation	Indication for Platelet (Plt)Transfusion
Platelet function defects	Depending on clinical features and setting. Note: platelet count is not a reliable indicator.
Bleeding / Massive transfusion	**Maintain Plt >50 x 10^9/L** if thrombocytopenia likely contributing to bleeding. **Maintain Plt >100 x 10^9/L** in presence of diffuse microvascular bleeding (DIC) or CNS trauma.

Contraindications

Not generally considered appropriate for treatment of: Immune mediated platelet destruction, thrombotic thrombocytopenic purpura, haemolytic uraemic syndrome, or drug-induced or cardiac bypass thrombocytopenia without haemorrhage.

Shelf life & storage

5 days from collection by the ARCBS at 20-24^{o}C when stored under continual gently agitation on a platelet rocker. Platelets must **NOT** be refrigerated.

Ordering

- Platelets are ordered through the Transfusion Medicine Unit. 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 Transfusion Medicine Unit and have to be shipped from the Australian Red Cross Blood Service. Therefore they are usually not immediately available and should be pre ordered for booked procedures or visits.
- Platelets are usually 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 ABO-compatible platelets are not available.

Transfusion dose, volume and rates volumes

Blood Product	Platelet Volume	Pack Size	Rate
Platelets All ARCBS issued platelets are leucocyte depleted and do not require bedside leucodepletion **DO NOT REFRIGERATE**	Dose depends on clinical situation – contact Haematologist for advice One PSD will raise the platelet count of a 70kg adult by 20-40,000/μL	**Adult pack:** Apheresis – single donor platelets approx. 180 ± 11 mL/pack (mean vol ± 1 standard deviation) **Pedi pack:** 51 ± 2 mL/pack (mean vol ± 1 standard deviation) 5 day expiry	MUST start within 30 minutes of issue OR notify TMU. **Duration:** Usually 15 - 30 mins per unit* *NB:* Transfusion duration depends on clinical indication and medical history, but infusion MUST NOT exceed 4 hours from issue or removal from monitored blood fridge* **Rate:** Start transfusion slowly for first 15 minutes. If no adverse effects occur increase transfusion to hourly rate.

Consent

Consent must be documented for all fresh and plasma derived blood products in the patient's medical notes. Refer to WNHS Transfusion Medicine Blood Product Prescription Consent and Refusal

Consumer Information

A range of patient information leaflets are available for use at WNHS:
Adults & Babies:

Blood Transfusion - KEMH Patient Information Leaflet

Blood Transfusion for your Baby - KEMH Patient Information Leaflet

Pregnant Women:

Anti D – You and Your Baby

Anti D – Information regarding Anti D for women with early pregnancy loss.

Surgical Patients:

Blood Transfusion – Intraoperative Cell Salvage

An interpreter should be provided for non-English speaking patients/guardians. There is also a Multi-cultural consent checklist with brochures available in different languages available on the ARCBS website Multi cultural consent checklist .

All WNHS consumer leaflets are available from Blood Bank or may be viewed on the WNHS Intranet Consumer information link

Administration of Platelets

All blood products must be double checked and confirmed at the point of administration by the two nurses who prepared the infusion.

- **WARNING** Ensure RIGHT PATIENT – RIGHT BLOOD. Refer to WNHS Checking Procedure for Blood Products.
- Informed consent must be gained from the parent/carer and documented prior to commencement. Refer to WNHS Transfusion Medicine Blood Product Prescription Consent and Refusal
- Explain procedure to patient/parent, including potential adverse reactions and symptoms.
- Record baseline observations: TPR and BP and general patient status including pre-existing rashes.
- Administer pre-medication, if prescribed, at a suitable time before the infusion commences to allow it to be effective.
- 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.
- Refer to WNHS Blood Transfusion – Equipment and Administration
- Transfusion must be commenced within 30 minutes of arrival to ward and must be completed within 4 hours of issue from Transfusion Medicine Unit or removal from cold storage.
- Platelets MUST be administered through a dedicated fresh (unused) intravenous giving set containing a 170-200 micron filter. They may be administered by gravity, via a B line or an infusion pump or Plum A+ Pump.
- A fresh blood giving set is necessary 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.
- 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. Refer to WNHS Blood Transfusion – Equipment and Administration
- Sets should be primed with 0.9% Sodium Chloride and used according to the manufacturer's instructions.
- Administer via a separate IV line. DO NOT mix/piggy back this product with other medications or IV fluids.
- The line may be flushed with Normal Saline following infusion.

Monitoring of transfused patient

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

Prior to commencement of the transfusion, patients should be appropriately educated and advised to report to staff immediately any adverse effects that they may experience during or after the transfusion.

Vital signs (temperature, pulse, respiration, blood pressure) must be undertaken and recorded on the observation chart in the medical notes to enable the information to be retrieved later, it necessary.

- Baseline TPR and BP
- TPR and BP at 15 minutes and then hourly until completion.
- TPR and BP on completion.

This is a **MINIMUM** requirement, some clinical areas may require more frequent observations such as unaccompanied, anaesthetised or unconscious patients, clinically unstable or patients who are unable to verbalise symptoms due to mental or physical limitations.

The possibility of a transfusion reaction should be considered in the event of any deterioration in the patient's condition. For further information on Transfusion Reactions, Management and Classification see WNHS Management of Transfusion Reactions and Adverse Events

Care and management of a transfusion reaction

Symptoms of acute reactions may occur up to 24 hours following administration of the blood product. Delayed transfusion reactions may occur days or even weeks following the transfusion episode.

Signs and symptoms include: Rise in temperature > 1 degree from baseline, chills/rigors, urticarial rash, hyper or hypotension, tachycardia, dyspnoea, pain in chest, loin or back, nausea/ vomiting, unexplained bleeding e.g. haematuria

If you suspect an adverse reaction:

- **STOP** transfusion.
- Provide emergency patient care.
- Arrange immediate medical review. Code Blue if necessary.
- Keep IV line open with normal saline (do not flush existing line – use a new IV line if required).
- Monitor vital signs at least every 15 minutes until stable (document in medical record).
- Refer to WNHS Management of Transfusion Reactions and Adverse Events as a guide to further treatment and management of the patient.

- All suspected reactions should be reported to TMU for investigation.
- Check Patient ID, labels and blood packs for discrepancies

Completing the transfusion

If there is any suspicion of a transfusion reaction, Transfusion Medicine Unit must be informed of the clinical details and the product should be returned. Refer to WNHS Management of Transfusion Reactions and Adverse Events

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 Transfusion Medicine Unit unless a suspected transfusion reaction has occurred, or in a massive transfusion situation where additional testing on the blood component bags may be required. Ensure documentation is complete.

Documentation

The following must be documented in the medical record:

- Indication for blood product transfusion.
- Consent for blood product.
- Blood product prescription.
- The bag sticker should be placed on the Transfusion Medicine Record (MR735), the date, start and stop times and checking signatures should be completed in the relevant boxes.
- Patient's observations, general condition during the transfusion and adverse effects and their management.
- Volume administered.
- Any equipment used (e.g. pumps/blood warning devices including operating temperatures).
- Outcome of the transfusion in terms of desired effect.

References

- Australian & New Zealand Society of Blood Transfusion (ANZSBT) & Royal College of Nursing Australia (RCNA) Guidelines for the Administration of Blood Products 2nd Edition, ANZSBT Guidelines for Pretransfusion Testing, 4th Edition, ANZSBT, 2007
- Guideline on the investigation and management of acute transfusion reactions. Prepared by the BCSH Blood Transfusion Task force. British Journal of Haematology 2012, 159, 143-153.
- Blood Transfusion: crucial steps in maintaining safe practice. BNJ; 2000. 9(3): 135-138.Bradbury, M Cruickshank, J.
- Flippin' Blood BloodSafe SA / ARCBS Second Edition June 2012 http://resources.transfusion.com.au/cdm/ref/collection/p16691coll1/id/20
- Management of Massive Blood Loss – Template: Br J Anaesth. 2002, 85, 487 - 491 Guideline BJH 2006 135 634-641

- National Blood Authority, Patient Blood Management Guidelines http://www.blood.gov.au/pbm-guidelines
- National Safety and Quality Health Service Standards, October 2012. Standard 7: Blood and Blood Products
- In Vitro and In Vivo Evaluation of Platelet Transfusions Administered Through an electromechanical Infusion Pump Snyder E, Rinder H, Napychank P, Am J Clin Path Vol 94 1990 77-80

Related WNHS policies, procedures and guidelines

- KEMH Blood Transfusion Checking Procedure
- WNHS Transfusion Medicine Blood Product Prescription Consent and Refusal
- Women & Newborn Health Service Patient Identification Policy
- WNHS Checking Procedure Pre Administration of Blood Products
- WNHS Blood Transfusion Equipment and Administration
- WNHS Management of Transfusion Reactions and Adverse Events
- Neonatology Clinical Care Guidelines
- Obstetrics and Gynaecology Clinical Guidelines

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