### Other Names
Buffy Coat platelets, CPD Pooled platelets, Platelets LR, Apheresis platelets LR

### Consent Required
Yes

### Pre-Transfusion Samples
- ☑ Not Required
- ☑ Blood Group
- ☑ Group & Screen
- ☑ Crossmatch
Not required if patient blood group is on file in Transfusion Medicine.

### Approval Requirements
Hematopathologist approval required in the following circumstances:
- ICU patient with platelet count ≥ 100 x 10⁹ /L
- All other patients with platelet count ≥ 50 x 10⁹ /L
- TTP and HUS patients (if diagnosis known) – all requests
- Plasma reduced
- Transport Team

### Product Description
#### CPD Platelets, Pooled
- Pooled platelet concentrate is prepared by separation of the buffy coat layer from approximately 480 mL of whole blood collected in 70 mL of citrate, phosphate, dextrose (CPD) anticoagulant.
- Four ABO matched platelet concentrates are pooled in the residual plasma from one of the four donations. The pool is leukocyte reduced by filtration.
- Average volume (mL) 342 ± 15, Platelet Count (x10⁹) per unit 298 ± 68

#### Apheresis Platelets
- Apheresis (single donor) platelets is a platelet concentrate collected into approximately 50 mL of ACD-A anticoagulant using automated apheresis techniques, which includes leukoreduction.
- Average volume (mL) 242 ± 8, Platelet Count (x10⁹) per unit 370 ± 48.

#### Plasma Reduced Platelets (PRP)
- The platelets are centrifuged to remove the majority of plasma, and 0.9% normal saline is added to re-suspend the platelets.
- For patients:
  - with a history of severe or repeated reactions and who are unresponsive to pre-medication, or
  - receiving ABO incompatible platelets and less than 3 years of age, or
  - on extreme volume restrictions
- Hematopathologist approval required for first time requests.

⚠️ PRPs expire within 4 hours of TML preparation start time.

#### HLA Matched Platelets
- For patients who have become refractory to random donor platelets due to platelet alloimmunization and have demonstrable anti-HLA antibodies.
- Hematopathologist approval required for first time requests.
- Requests will then be made to CBS upon hematopathologist approval, and may take greater than days after request to access first time HLA matched platelet

#### Platelet Antigen (HPA-1a) Negative Platelets
- For patients with specific platelet antibodies against HPA-1a or negative phenotype for a HPA-1a.
- For treatment of a fetus / neonate with NAIT (neonatal alloimmune thrombocytopenia).
**Divided units**
- Units are divided into smaller volumes, aliquots, to facilitate transfusion to neonates and infants.
- Contact TLM to request aliquot.
- For volumes less than 50 ml, a syringe aliquot is used.
- For volumes greater than 50 ml, a mini bag aliquot is used.

- Irradiated platelets may be required in certain circumstances. Refer to Irradiation of Blood Components in ePOPS.
- If Rh positive platelets are given to an Rh negative patient, administration of Rh Immune Globulin should be considered.

**Clinical Indications**

**Prophylactic platelet transfusion in a non-bleeding patient**
- Platelets less than 10, or
- Platelets less than 20 to 40 with additional risk factors (signs of bleeding, high fever, hyperleukocytosis, rapid fall of platelet count, coagulation abnormalities, critical illness, or drug induced platelet dysfunction)
- Platelets between 30 and 50 in a pre-term neonate
- Platelets less than 25 in a non-bleeding and stable preterm neonate

**Prior to procedures or Surgery**
- Platelets less than 20 Central Venous Catheter Placement
- Platelets less than 50 Lumbar Puncture for diagnostic LP
- Platelets less than 20 Lumbar Puncture for stable, low risk patients (at physician’s discretion)
- Platelets less than 50 invasive procedure with risk of major bleeding
- Platelets less than 50 to 80 Epidural catheter insertion or removal
- Platelets less than 50 Major Surgery
- Platelets less than 100 Neurosurgery or Ophthalmic Surgery

**Bleeding Patient**
- Platelets less than 50 and severe bleeding
- Platelets less than 100 multiple trauma, traumatic brain injury or CNS Bleeding
- Platelets less than 30 and non-severe bleeding
- Platelet dysfunction, irrespective of count

**Immune Thrombocytopenia**
- Platelets less than 50 in preterm neonate with FNAIT
- Platelets less than 30 in term neonate with FNAIT
- **DO NOT** use prophylactic platelet transfusion in autoimmune thrombocytopenia (ITP)
- ITP and Platelets between 30 and 50 prior to surgery when other treatment has failed and/or intervention is urgent
- ITP and life threatening bleeding – consider multiple doses and concomitant IVIG

**Massive Transfusion**
- Massive Transfusion as dictated by clinical assessment and guided by laboratory results when feasible.

**Contraindications**
- Immune thrombocytopenia purpura: platelet transfusion will be ineffective,
reserve for life threatening bleeding.
- Thrombotic thrombocytopenia purpura and hemolytic uremic syndrome: platelet transfusion is associated with exacerbation, only consider with life threatening bleeding
- Heparin-induced thrombocytopenia; platelet transfusion is associated with arterial thrombosis.

**Risks**
Febrile Non-Hemolytic transfusion reaction, allergic reactions, transfusion associated circulatory overload (TACO), transfusion related acute lung injury (TRALI), bacterial contamination, hemolytic reactions, anaphylaxis, graft vs. host disease, hyperkalemia, iron overload, post transfusion purpura and transmission of infection.

**Dosage**

**Neonate/Infant/Pediatric:**
- Recommended dose 10 to 15 mL/kg. Maximum dose 20 mL/kg.
- 10-20 mL/kg to a maximum of a full adult dose.
- For children greater than 25 kg use adult dosing

**Adult:**
- The usual dose for an adult is one unit of pooled platelets or one unit of apheresis platelets.
- This dose should increase the platelet count by at least 15 to 25 x10⁹/L

⚠️ **If the patient is actively bleeding these guidelines may need to be exceeded.**

**Administration**
Refer to blood administration procedures.
- **Volumetric Method:**
  - for volumes greater than 50 mL
  - a blood administration set, with 170-200 micron filter, is required
- **Syringe Method:**
  - for volumes less than 50 mL
  - the product is pre-filtered, no filter required at time of administration

Note:
- Do not transfuse platelets through an administration set which has been used for red blood cells; platelets will adhere to fibrin captured by the filter.
- If ordered a post-transfusion platelet count should be done within 15 min to 1 h post platelet transfusion to measure the response to the platelet transfusion.
- If the platelet transfusion was given because the patient was bleeding, the clinical response is the most important indication of the effectiveness of the transfusion.

**Warming Permitted**
No

**Compatible Solution**
0.9% Normal Saline and Plasma Lyte only.

**Infusion Rates**
- **Infuse** each unit of platelets at 1mL/kg/h, up to a maximum of 50 mL/h (when product reaches the patient), for the first 15 minutes.
- **Adjust** the flow to the prescribed infusion rate listed below, if there are no signs or symptoms of a transfusion reaction during the first 15 minutes.
- **Infuse** at 10 to 20 mL/kg/h for remainder of transfusion

⚠️ These rates may be exceeded in emergency situations
Patient Monitoring | Refer to Administration of Blood Products procedure.

Storage Conditions | 20-24°C with continuous gentle agitation.  
| **Return** platelet unit and Transfusion Record to Transfusion Medicine within 20 minutes from time of issue if there are any delays in administration.  
| **DO NOT** refrigerate platelets.  
| **DO NOT** store platelets on nursing unit.

References

- **Blood Transfusion** (2015). *NICE Guideline*  
- Canadian Children’s Cancer & Blood Disorders *Guideline for Platelets Transfusion Thresholds for Pediatric Hematology/Oncology* Patients (2011)
- Standards for Hospital Transfusion Services (Ver. 4.0). (2017). Ottawa, ON. Canadian Society for Transfusion Medicine.
- National Blood Authority (Australia), Patient Blood Management Guidelines 2016/2017

Developed By  
Transfusion Medicine – Transfusion Safety Nurse Clinician

Version History

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