Platelets use in Newborn Intensive Care Unit (NICU)

Guideline Responsibilities and Authorisation

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Target Audience	Consultants, Registrars, NNPs, CNSs, RNs
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Procedure Review History

Version	Updated by	Date Updated	Summary of Changes
2	Joyce Mok	September 2015	3 yearly review
3	Joyce Mok	September 2018	3 yearly review
4	Maggie Rainbow	October 2022	3 yearly review, evidence based guidelines

Platelets use in Newborn Intensive Care Unit (NICU)

1 Overview

1.1 Purpose

To outline the guideline for the use of platelets in neonates.

1.2 Scope

Te Whatu Ora Waikato medical and nursing staff working in NICU.

1.3 Patient / client group

Neonates and infants in NICU.

1.4 Exceptions / contraindications

Parental, cultural or religious reasons for declining consent

Note: If parents decline blood transfusion for their baby, they must sign the Medical Directive for patients who refuse blood transfusions (including Jehovah Witnesses) form (G3825HWF)

Parent information for blood transfusions in children and the Care of Children Act and blood transfusions can be found here (Intranet link).

1.5 Indications

Thrombocytopenia; massive transfusion protocol

Platelet Count	Indications for transfusion
<20 x 10^9	All well term neonates (except in maternal ITP unless there is active bleeding)
<25 x 10^9	Neonates <34 weeks Clinically unstable (e.g. fluctuating BP) Previous major bleeding (e.g. Grade 3-4 IVH, pulmonary haemorrhage) Current minor bleeding Concurrent coagulopathy Requiring invasive procedure (e.g. NG, LP), surgery or exchange transfusion for Neonatal Alloimmune Thrombocytopenia (NAIT)
<50 x 10^9	Major haemorrhage
May be given as part of the Massive Transfusion Protocol Adopted from Starship – Platelets in the Newborn Services https://starship.org.nz/guidelines/blood-products-platelets-newborn-services/	

2 Clinical management

2.1 Guideline

Dose

- Usually 10ml/kg (range 10-20 ml/kg depending on clinical context)

Special cases

Neonatal alloimmune thrombocytopenia

When transfusing platelets to neonates affected by NAIT, platelets must be cross-matched with maternal.

Route

- Intravenous 30 minutes. Other vascular access devices such as UACs, and central lines may be used only after consultation with NICU consultant.

Filter

- Blood products are not given through the usual IV filter (i.e. PALL™ filter). This should be bypassed or removed when administering blood products. Spike all blood product bags with an In-Line blood filter (i.e. standard blood giving set). This process is important to prevent infusion of any potential blood clots or cellular debris.

ABO

- The Blood Bank will normally provide Platelet Concentrates that are ABO identical to the recipient or are ABO compatible, but it is not a strict requirement for platelet concentrates to be ABO compatible

(N.B Blood bank now only stock A and O donor blood)

Recipient	Donor
A or AB	A, O
O or B	O

Rhesus (RhD)

- Rh (D) positive patients can receive Rh (D) negative and Rh (D) positive platelets.
- Rh (D) negative patients should receive Rh (D) negative platelets.

Consent

- Written consent required. Consent for use of all blood components and blood products form (T1528HWF
- Verbal consent can be obtained in the absence of a parent/legal guardian, with written consent being obtained at earliest opportunity. Verbal consent must be clearly documented in the clinical notes
- In the event that a parent withholds consent for blood product transfusion, this requires discussion with SMO and transfusion can go ahead, under the “Care of Children Act 2004”, with clear documentation in the clinical notes.

Flush

- Use Sodium chloride 0.9% for flushes.

Do not

- **Do not** add medication to platelet concentrates
- **Do not** use 5% Dextrose solutions and hypotonic sodium solutions (may cause haemolysis).

Monitoring

- According to NICU nursing and medical procedures for blood transfusion
- For suspected transfusion-related reactions refer to protocol Blood Transfusions to Infants in the Neonatal Intensive Care Unit procedure (1645).

Storage

- This product is stored at 20-24°C (room temperature) with constant agitation (in Blood Bank).
- Transfuse as soon as possible. Transfusions must be completed within four hours of being issued.
- Unspiked blood products can be returned to Blood Bank within 30 minutes of being issued to be returned to storage.
- Never store in a fridge.

3 Evidence base

3.1 Bibliography

- Te Whatu Ora Waikato Blood Resources (2014). How to administer Platelets - Quick Guide. Retrieved on September 3, 2018 from https://clinicaldata.nzblood.co.nz/resourcefolder/platelets.php?dhbid=6
- Australian and New Zealand Society of Blood Transfusion & Australian College of Nursing (2018). Guidelines for the administration of blood products. Retrieved on September 19, 2018 from https://anzsbt.org.au/data/ANZSBT_Guidelines_Administration_Blood_Products_3rdEd_Jan_2018.pdf
- New Zealand Blood Services (2016). Transfusion medicine handbook: A guide to the clinical use of blood components, blood products and blood transfusion procedures in New Zealand, 3rd ed. Retrieved on September 20, 2018 from https://www.nzblood.co.nz/assets/Transfusion-Medicine/PDFs/Transfusion-Medicine-Handbook-2016.pdf
- Starship Hospital Website (2019). Blood products - platelets (Newborn Services) Retrieved on December 13, 2021 from https://starship.org.nz/guidelines/blood-products-platelets-newborn-services/
- Care of Children Act 2004 section 37 https://www.legislation.govt.nz/act/public/2004/0090/latest/DLM317465.html

3.2 Associated Te Whatu Ora Waikato Documents

- Blood Transfusions to Infants in the Neonatal Intensive Care Unit procedure (1645)
- Medical Directive for patients who refuse blood transfusions (G3825HWF)
- Parent information for blood transfusion in children (Intranet link)