## TITLE: Platelet Transfusion in Neonatal Patients (Apheresed Platelet Pedi-Pack)

## PRINCIPLE:

The normal platelet count in newborns is similar to that in adults. A platelet count less than 150,000/uL in a full term or premature infant is abnormal. Approximately 20% of infants in neonatal intensive care units have mild to moderate thrombocytopenia, which is the most common hemostatic abnormality in the sick infant.

**CLINICAL SIGNIFICANCE**

Platelet transfusion is indicated in neonates and young infants with platelet counts below 50,000 uL who are experiencing bleeding. The issue of prophylactic platelet transfusions in the newborn remains controversial. Bleeding is rare in older patients with thrombocytopenia unless the platelet count is less than 10,000 uL, but preterm neonates and infants with other complicating illnesses may bleed at higher platelet counts. Factors that may contribute to bleeding at higher platelet counts include: immaturity of the coagulation system; circulation of an anticoagulant that enhances inhibition of thrombin; intrinsic or extrinsic platelet dysfunction; and altered vascular elements that may increase vascular fragility. Of major concern is intraventricular hemorrhage, which occurs in up to 40% of preterm neonates in the first 72 hours.

**PERSONNEL:**

Medical Technologists

**SPECIMEN:**

Necessary only if the Blood Bank has no previous record of the patient. In that case, no special preparation of the patient is required prior to specimen collection. Blood collected with or without an anticoagulant may be used. (Plain or EDTA Microtainer). The blood sample should be tested as soon as possible after collection. If delay occurs, store sample at 2 C – 8 C. Sample can only be used for 3 days from collection time.

**EQUIPMENT:**

1. Platelet Incubator and Rotator

### STEPWISE PROCEDURE:

1. When an order is received for platelets, check the Blood Bank records for cord blood results on the patient.
2. If no record is found, have the patient’s blood collected as explained in procedure No. 4840-BB-100, *Ordering Blood and Other Components.*
3. Type the patient for ABO and Rh. Check doctor’s orders. Order will read number of ml to infuse (ex. Transfuse 17 ml platelets).
4. Call Versiti to place order.

These platelets **MUST BE**:

* **Leukoreduced Apheresed Platelet, Type and Rh Specific or AB, Rh same as patient, CMV Negative, Irradiated or Pathogen Reduced.**
* **Ask for a Quad Pack to be attached.**
* **If type specific platelets or AB Rh same as patient are NOT**

**available, contact the physician for instructions.**

1. Enter unit into the inventory.
2. Place the unit in the platelet incubator

Transfusion

1. Remove unit from Platelet Incubator when floor is ready to transfuse.
2. Mix unit well.
3. Remove clips from satellite bags.
4. Allow platelets to run in equal amounts into satellite bags.
5. Seal tubing in two places. One near the original platelet-containing bag and the other near one of the transfer packs. Use heat sealer to accomplish this sealing.
6. Cut or separate the tubing above the seal near the transfer pack.
7. The expiration date does not change.
8. Split unit in the computer by using Inventory>Edit>crProduct>Split.

See Blood Bank Computer Manual for more information.

10. Split units are dispensed in the same manner as routine platelet orders.

11. Print 2 product labels and patient labels. Affix 1 set to the aliquot and send the set in the bag with the aliquot.

NOTE:

Units with grossly visible platelet aggregates should not be issued for transfusion. If this occurs contact Versiti to replace these platelets.

Compatibility test (crossmatch) is not required unless the product appears to contain more than 2 mL of red cells. In these cases, Versiti will send a tube for crossmatching with the unit. Do crossmatching in accordance with procedure # 4840-BB-308, Tests for Serologic Incompatibility

# QUALITY CONTROL:

SoftID provided positive patient and specimen identification at the point of care. This effective lab software solution enhances patient safety by accurately identifying the patient and the appropriate lab test and ensuring that patient lab specimens are correctly bar coded and labeled.

# INTERPRETATION:

An apheresis platelet aliquot unit contains approximately 5.5 x 10 10 platelets and should raise the platelet count of an average full-term newborn by 50,000 – 100,000 uL if given in a dose of 5 – 10 mL/kg. The platelet component should be group-specific, and should not contain clinically significant unexpected red cell antibodies. Transfusion of incompatible plasma is more dangerous in infants, with their very small blood volume, than in adults.

# REFERENCES:

Hospital Service Manual Heartland Blood Bank

AABB Technical Manual, 18th Edition, 2014.

Standards for Blood Banks & Transfusion Service 30th Edition, 2015.

S: LaboratoryP&P/BloodBank/4840-BB-611ch06/23/09/mw01.11.2021