

MANAGEMENT OF PRETERM THROMBOCYTOPENIA

By Sandra Wai MD (10.19.20)

PURPOSE: Standardize platelet transfusion threshold for the preterm infant ≥ 7 days of age.

LEVEL: Interdependent (*requires a physician order)

SUPPORTIVE DATA: Preterm infants with severe thrombocytopenia (defined as a platelet count $< 50,000/\text{mm}^3$) are often given a platelet transfusion to prevent major bleeding; however, it is not clear this is a helpful practice. In 2019, a multi-center, randomized trial found that transfusion increased the risk for mortality, major bleeding, and bronchopulmonary dysplasia in preterm infants without active bleeding¹. Thus, expert recommendation has shifted toward a more restrictive threshold for prophylactic platelet transfusions^{1,3}.

SELECTED PATIENTS

- Infants < 34 weeks gestation at birth AND at least 7 days of age with thrombocytopenia. These infants often include those affected by fetal growth restriction, late-onset sepsis, and/or necrotizing enterocolitis.
 - o Of note, group consensus was not achieved for management of infants < 7 days of age. It is reasonable to use this restrictive threshold, particularly for hemodynamically stable infants.
- Guideline does **not** apply to:
 - o Infants with active major bleeding, including intraventricular or intracranial hemorrhage (confirmed by head ultrasound), pulmonary hemorrhage, frank rectal bleeding, or other clinically significant bleeding.
 - Bleeding is no longer considered active if resolved for at least 72 hours.
 - o Infants who did not receive vitamin K.
 - o Infants with immune thrombocytopenia.
 - o Infants undergoing surgery or invasive procedures such line placement, lumbar puncture, or chest tube placement.

INTERVENTION

- For platelet count $< 25,000/\text{mm}^3$, transfuse with 15 ml/kg platelets over 30-60 minutes.

REFERENCES

1. Curley, A. *et al.* Randomized Trial of Platelet-Transfusion Thresholds in Neonates. *N Engl J Med* 380, 242–251 (2019).
2. Sparger, K. A. *et al.* Platelet Transfusion Practices Among Very-Low-Birth-Weight Infants. *JAMA Pediatr* 170, 687 (2016).
3. Sola-Visner, M. C. Platelet Transfusions in Neonates — Less Is More. *N Engl J Med* 380, 287–288 (2019).

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