

Standard Operating Procedure for Partial Exchange Transfusion in Neonates

Purpose: To perform a partial exchange transfusion in neonates with high levels of bilirubin or other conditions requiring the removal of a specific component of blood.

Equipment Needed:

1. Neonate warming equipment (isolette or radiant warmer)
2. Blood warmer
3. Blood pressure cuff, pulse oximeter, and cardiac monitor
4. Intravenous catheters (20 or 22-gauge)
5. Extension tubing with stopcocks
6. 10 ml syringe for drawing blood samples
7. Blood collection set for donor blood
8. Blood administration set
9. Normal saline for flushing
10. Appropriate laboratory requisition forms
11. Personal protective equipment (gloves, gowns, masks, etc.)
12. Strict adherence to infection control protocols

Procedure:

1. Prepare and educate the parents about the procedure, explaining the risks, benefits, and alternatives and Obtain informed consent from the parents or legal guardians.
2. Verify the identity of the neonate by checking the identification tags on the wristband and medical records.
3. Perform a detailed assessment of the neonate's vital signs, oxygen saturation, and clinical condition.
4. Warm the neonate to maintain a temperature of at least 36.5°C (97.7°F) throughout the procedure.
5. Prepare the donor blood, ensuring compatibility with the neonate's blood type.
6. Use strict aseptic technique to insert an intravenous catheter into the neonate's umbilical vein or peripheral vein.
6. Connect the extension tubing with stopcocks to the catheter and flush with normal saline to check for patency.
7. Attach the blood administration set to the donor blood bag and prime the tubing with normal saline.
8. Adjust the blood warmer temperature to warm the donor blood to a temperature of approximately 37°C (98.6°F).
9. Use the 10 ml syringe to draw a baseline blood sample from the neonate to determine initial laboratory values. Open the stopcock to allow a small amount of the neonate's blood to flow into the waste container.
10. Begin slowly infusing the warmed donor blood into the neonate, tracking vital signs and oxygen saturation closely.
11. Gradually adjust the rate of infusion based on the neonate's tolerance and the desired volume exchange.

12. Upon completion of the exchange, carefully close the stopcock to prevent air bubbles from entering the neonate's circulatory system.
13. Secure the intravenous catheter and cover with an occlusive dressing.
14. Monitor the neonate's vital signs and clinical condition post-procedure, taking additional blood samples as necessary.
15. Document the procedure, including vital signs, blood sample results, volume exchanged, and any complications.