

PROTOCOL FOR: Arterial Line: Peripheral

- POLICY:**
1. Arterial lines will be connected to a BP transducer with continuous readout at all times and BP alarms set and functioning.
 2. It is recommended that a type and screen blood specimen be sent to the Blood Bank so blood is available.
 3. Solution, tubing, filter, fluid and transducer tubing will be changed every 24 hours and will be labeled with the date and time hung and the initials of the nurse.
 4. Arterial lines will be maintained using aseptic technique and in a manner which prevents air from entering the system. Tubing, transducer and connections will be visible at all times.
 5. Blood deficits are to be kept when the need for blood sampling is the primary indication for the arterial line and:
 - a. for infants with birth weights <1000 grams until they no longer require daily labs.
 - b. for any critically-ill infants irrespective of weight and type of venous or arterial access.
 6. Flushing of catheters is generally avoided due to the possibility of arterial spasm and retrograde flow.
 7. An order is needed if the arterial line needs to be flushed.
 8. All saline solutions used as flush are to be preservative free to avoid potential toxicity of benzyl alcohol.
 9. Saline vials are for single use only and should be discarded after one use.
 10. Peripheral arterial lines must be handled very carefully to prevent potential complications to the infants' arteries.

DESIRED PATIENT

OUTCOMES: The infant will not experience catheter-associated infection, hemorrhage, circulatory compromise or thromboembolic complications as a result of peripheral arterial line.

**CLINICAL
ASSESSMENT AND**

- CARE:**
1. Assess on an hourly basis and report changes:
 - a. site for bleeding, signs of infection, or poor perfusion
 - b. stability of catheter placement
 - c. extremity for blanching
 - d. signs of infiltration
 - e. changes in BP wave peak and quality; rule out mechanical reasons

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- f. visibility of tubing and connections
- 2. Document blood pressures every hour on the nursing flow sheet.
- 3. Assess ease of withdrawing blood when obtaining samples.
 - a. Report difficulty drawing from line.
- 4. Assess pain at least every 8 hours to evaluate for pain related to catheter presence.
 - a. Report pain score > 4.
- 5. Generally, NS or ½ NS with Heparin (0.5-1.0 unit per ml) solutions are used as per MD/AP order.
- 6. Use only TB syringe and small gauge needles for drawing blood samples. Coordinate blood work to coincide with blood gases to minimize entry into system.
- 7. Routine flushing is not recommended; an order is needed.

PROCEDURE FOR: Blood Drawing from Peripheral Arterial Line

EQUIPMENT: Peripheral Arterial Line
1 TB syringe
Chlorhexidine gluconate (CHG) swabs
Sterile 4x4
Heparinized blood gas syringe
25 gauge needle
Sterile gloves

PROCEDURE:

- | <u>ACTION</u> | <u>POINTS OF EMPHASIS</u> |
|--|---|
| 1. Coordinate other blood work to coincide with blood gases, if possible, to minimize entry into system. | |
| 2. At the bedside, verify the identity of the infant and lab studies to be drawn. | |
| 3. Wearing sterile gloves, place sterile 4x4 under rubber stopper of T-connector. | 3. Use stopper on T-connector located closest to IV catheter. |
| 4. Clamp T-connector close to stopper being used for blood drawing. | |
| 5. Wipe stopper with chlorhexidine gluconate (CHG) for 15 seconds using friction. Let CHG dry. | |
| 6. Insert 25 gauge needle into stopper. | 6. Observe universal precautions. |

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7. Let 3 to 4 drops of blood drip onto the 4x4 from the needle to clear IV solution from the line.
8. Draw required blood for lab studies.
 7. a. If drawing a blood gas, this should be the first specimen withdrawn. Use the blood gas syringe and draw back slowly.
 - b. When obtaining blood for other lab tests, use a TB syringe only and draw back very slowly to start blood flow. If blood does not flow, reposition the extremity. If it still does not draw back, the artery is probably in spasm. Abort the procedure and allow the artery to relax. Try again in about 15 minutes.
 - 1) Do not allow blood to drip freely from the hub of the needle into a bucket. There is a potential for clotting the catheter when the flow is sluggish as well as greater likelihood of blood exposure.
9. Remove needle and syringe and open clamp to allow IV fluid to clear the line and the catheter.
10. Prepare specimens for lab.
11. Flush with NS ONLY when there is significant blood back up into the line; an order is needed.
12. Remove syringe and replace with TB syringe with 0.25 ml NS. Raise extremity to allow RBCs to settle down. Flush very slowly with 0.25 ml NS. If blanching occurs, stop flushing.

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 6/89

REVISION DATES: 2/90, 6/91, 9/92, 8/93, 12/94, 7/97, 11/99, 10/03, 5/04, 11/06, 12/08, 9/09

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