Newborn Critical Care Center (NCCC) Guidelines

Long PIV (LPIV) Guidelines

BACKGROUND

There are multiple options for vascular access in the NCCC. These include PIV, LPIV, midline PICC, PICC, and Broviac. The LPIV is an option for infants who require **non central** vascular access for a length of time. The LPIV is placed under sterile technique and can be in place for up to 29 days whereas average dwell time for a PIV is 30-37 hours. The significant advantages to the LPIV are extended dwell time, decreased risk of infection, and reduced cannulation attempts which improves patient/parent satisfaction. Disadvantages include complications such as occlusion, leaking, infiltration, dislodgement and phlebitis.

TARGET POPULATION

1. >/= 32 weeks gestation
2. Vein can accommodate 1.9Fr catheter
3. IV therapy anticipated for > 5 days
4. Difficult IV access (DIVA)
5. Nutritional needs do not warrant central TPN; osmolality must be < 1010 mOsm/L

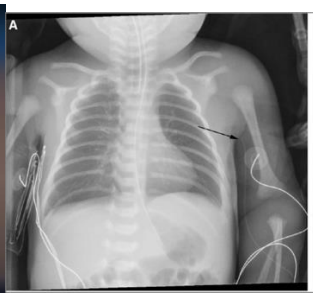
CONTRAINDICATIONS

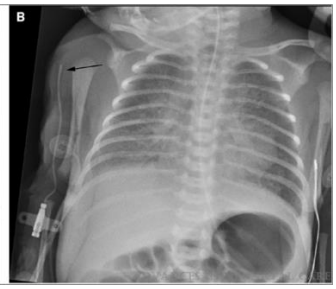
- Vasopressor requirement
- Central TPN

CATHETER TIP PLACEMENT

Upper Extremity

- Above the antecubital space and below the axillary fold





Lower Extremity

- Between knee and groin/inguinal fold

PROCEDURE

1. Measure from insertion site to tip of desired placement
2. Gather supplies and time out
3. Set up sterile field – maximize sterile precautions
4. Prime LPIV catheter with 0.9% Normal Saline (NS)
    a. **Remove wire stylet** as these will not be used at UNC
5. Prep insertion site and surrounding area with Chlorhexidine solution
6. Cannulate vessel with introducer/needle; do not need to insert sheath all the way
7. Remove needle
8. Thread catheter to pre-determined length in the vein; should thread easily
9. Peel away the introducer and adjust catheter if needed
10. Check for brisk blood return
11. Re-measure that the catheter is in the desired location
12. Attach 10 mL NS flush and flush catheter
13. Apply needless connector (clave) – ensure catheter aspirates and flushes easily
14. Utilize SecurePort IV, Tegaderm, & Steri-strips
15. Obtain chest and upper extremity radiograph (left or right) or abdominal and lower extremity radiograph (left or right) to confirm placement of LPIV
16. Document procedure in electronic medical record (EMR)
17. Video of LPIV insertion

MAINTENANCE

1. LPIV must be flushed every 24 hours (at line change) regardless of continuous IV fluids. Use a 10 mL syringe; a less than 10 mL syringe can cause damage to the LPIV catheter. There will be more resistance than with a PIV.
    a. Observe site during flushing to ensure patency
    b. If increased resistance is met, do NOT continue flushing. Notify the NNP
    c. Do not push and manipulate tissue surrounding LPIV as this increases risk of infiltration and phlebitis
    d. Connect & disconnect IV fluids and administer medications per UNC policy
2. Limb circumference every shift and documented in EMR
    a. Measure circumferentially where the end of the catheter would be. For example, if the catheter is 6 cm and is inserted 6 cm, the RN should measure 6 cm from the insertion site and then measure circumferentially at that point.
3. IV fluids must have 0.5 units Heparin/mL and infuse at a minimum of 0.8 mL/hr
4. Transparent dressing per NCCC central line policy
5. Dressing change PRN

6. Label all LPIV lines
7. Do not use for blood draw
8. If needed, may be used for blood administration
9. Do not perform BP or use a tourniquet on the LPIV extremity

COMPLICATIONS

1. Leaking
2. Infiltration: NCCC IV Infiltration or Extravasation Guideline
3. Palpable venous cord or hardening/phlebitis
4. Clotting
5. Accidental dislodgement
6. Broken catheter

REMOVAL

1. Remove if catheter is contaminated, if complications occur, or if line is no longer needed
2. Notify provider to remove the catheter
3. Monitor for bleeding
4. Sterile dressing to remain on site for 24 hours

LPIV NURSING CONSIDERATIONS AND ASSESSMENT

1. Use the TLC method of assessment every hour - "Touch, Look, Compare"
2. When assessing the LPIV, the RN should know the location of the tip of the catheter is typically 6-8cm from the insertion site
3. LPIV lines require a limb circumference to be obtained every shift to assess for infiltration or thromboses. Document limb circumference in EMR

LPIV SITE AND DRESSING *EXPECTED* FINDINGS

- ***Site:***
  - Clean, dry, good distal perfusion, no drainage, and no redness
- ***Dressing:***
  - Clean, dry, intact, and secured
- ***Patency/Care:***
  - Fluids infusing with no problem, no pain at the site, flushes easily

LPIV SITE AND DRESSING *UNEXPECTED* FINDINGS

- Swelling
- Tenderness
- Redness or blanching
- Increased or decreased temperature
- Mottling of the skin at the site or distal to it
- Drainage of leaking IV fluid
- Streak formation
- Palpable venous cord

- Unilateral arm swelling
- Alterations in movement or function: If limb is cool, further assessment needs to be taken; the line may be placed in an artery.

RN ASSESSMENT OF INFILTRATION

1. Assess site and document a minimum of every hour until resolved
2. Assessment includes: blanching, cap refill, pain, swelling, discoloration, blister formation around site, affected extremity distal to the infiltrate including sensation and pulses

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