Procedure: Central Venous Access Devices - Flushing a Central line, Aphaeresis or Dialysis Catheter

Approved:

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FLUSHING a CVAD or Aphaeresis or Dialysis Catheter

Essential Information
1. Intravenous Therapy, Blood Draws via a VAD, and Venipuncture Competency required. A medical order is required for ALL flush solutions.
2. Flushing with a syringe smaller than 10mL generates excessive pressure, which may cause catheter rupture or tip malposition.1
3. Dialysis or aphaeresis catheters that are used solely for the purpose of dialysis or aphaeresis are locked with 1000units/ml heparin and only by dialysis or aphaeresis nurses unless otherwise ordered. If the catheter has multiple uses, it is flushed with heparin per LIP order.
4. Manufacturer’s guidelines state that central catheters must be flushed with 20ml 0.9% saline post blood draw and TPN infusion. 2
5. Push Pause Technique creates turbulent flow within the catheter lumen minimizing risk of occlusion.
6. Positive pressure prevents blood from being pulled back into the catheter.3
7. Flush Guidelines are posted on the Nursing Intranet web site for Standards of Practice and Procedures.

Equipment List
1. Non-sterile gloves
2. Alcohol prep pads
3. One (1-2) Pre-filled syringe containing 10ml 0.9% sodium chloride per catheter lumen.
4. One (1) Pre-filled syringe containing heparin per LIP order per catheter lumen as necessary

- Catheters used solely for aphaeresis or dialysis require:
  1. Two (2) pre-filled syringes containing 10ml 0.9% sodium chloride
  2. One (1) 5ml syringe.
  3. One each (per lumen) of single dose vials Heparin 1000 units/mL
  4. Two (2) 10ml syringe with blunt cannula per lumen
  5. Two (2) needle-less vial access devices
  6. Alcohol prep pads

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<th>STEPS</th>
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<td>1. Perform hand hygiene.</td>
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<td>2. Put on non-sterile gloves.</td>
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<td>3. Disinfect injection cap with alcohol and allow it to dry.</td>
<td>3. Scrub the hub for 15-30 seconds.</td>
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<td>4. Attach 10ml syringe of 0.9% sodium chloride.</td>
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<td>5. Unclamp catheter, if clamp in place.</td>
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For most CVADS:
6. Aspirate for free flowing blood return and flush with 0.9% sodium chloride per appropriate flush guidelines. 6. Use “push- pause” technique by making frequent pauses while injecting solution.

Utilize the ‘positive pressure’ technique by maintaining pressure on the syringe plunger while withdrawing the syringe from the injection cap or clamping while flushing if clamp present.3,4

7. Disinfect injection cap with alcohol and allow it to dry.3,5 | 7. |
8. Attach syringe containing heparin, if necessary. | 8. |
9. Fill catheter with appropriate amount of Heparin solution using “positive pressure” technique, i.e., close the catheter clamp while flushing before the syringe completely empties or by maintaining pressure on the syringe plunger while withdrawing the syringe from the injection cap.

9. Positive pressure prevents blood from being pulled back into the catheter.

10. Repeat for each lumen to be flushed using a separate syringe.

### For aphaeresis/dialysis catheters:

11. a. Disinfect injection cap with alcohol and allow it to dry.

11. Only dialysis nurses or aphaeresis may access catheters that are used solely for the purpose of dialysis or aphaeresis, unless otherwise ordered.

12. Unclamp catheter. Withdraw 3-5 mL blood using 5ml empty syringe6 and DISCARD because it contains highly concentrated heparin (1000 units/mL).

12. DO NOT return or re-infuse “Discard” blood withdrawn from CVADs that have been flushed with a Heparin concentration greater than 100 units/mL.

13. Attach pre-filled 0.9% sodium chloride syringe and flush with 10-20ml per lumen, using push-pause technique. Clamp catheter.

13. Use “push-pause” technique by making frequent pauses while injecting solution.1

14. Disinfect injection cap with alcohol and allow it to dry.

14.

15. Instill catheter with 1000units/ml heparin solution per LIP order using “positive pressure” technique.

15. Utilize the ‘positive pressure’ technique by maintaining pressure on the syringe plunger while withdrawing the syringe from the injection cap or clamping while flushing if clamp present.3,4

16. Remove gloves and perform hand hygiene.

16.


17.

**Reference:**