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MANITOBA RENAL PROGRAM

SUBJECT ▪ Alteplase IV Infusion for Clearing Hemodialysis Catheter Thrombosis	**SECTION** **30.20** Vascular Access **CODE** **30.20.09**
AUTHORIZATION ▪ Professional Advisory Committee, Manitoba Renal Program ▪ Nursing Leadership Council, St. Boniface General Hospital	**EFFECTIVE DATE** May 2008 **REVISION DATE** September 2013 April 2016 October 2018

PURPOSE:

1. To describe the procedure for safe administration of a thrombolytic agent to treat thrombosis of non-tunneled or tunneled central venous catheter (CVC) for Hemodialysis.

POLICY:

1. If a large clot is observed on cathetergram or previous local instillations of alteplase have not cleared the catheter, a systemic infusion of alteplase may be ordered by the nephrologist. The dose is 3 mg alteplase in 50 mL 0.9% NaCl into both lumens over 3 hours (17 mL/hr). Thus, two infusions of 3 mg alteplase in 50 mL 0.9% NaCl will be required. The total dose infused will be 6 mg so the risk of bleeding is minimal.

2. Hemodialysis Nurses may infuse IV alteplase upon obtaining a physician's order that is separate to the preprinted *Chronic Hemodialysis Physician's Order Sheet* (W-00109C)

EQUIPMENT:

- 3 – 2 mg vials alteplase (2 mg)
- 4 – 10 mL syringes
- Sterile water for injection (without bacteriostat)
- 2 – 50 mL mini bags 0.9% NaCl
- 2 medication infusion pumps
- Alcohol swabs
- Clean disposable gloves
- Equipment to access catheter lumens as per procedure 30.20.02, *Accessing and Locking Dialysis Central Venous Catheter or 30.20.04 Use of Closed Needleless Access device with Hemodialysis Central Venous Catheters (CVC)*.

PROCEDURE:

1. Withdraw 2.2 mL of sterile water for injection and inject into a 2 mg alteplase vial.

2. Swirl vial until contents are completely dissolved. Do not shake.

3. Repeat Steps 1 and 2 for the remaining 2 vials of alteplase.

KEY POINTS:

- Final concentration = 1 mg/mL (vial contains 2.2mg alteplase).
- Reconstituted solution should be colourless or pale yellow and transparent.
- The reconstituted solution should be used within 8 hours when stored at 2° to 30° Celsius.

PROCEDURE:	KEY POINTS:
4. Withdraw 3 mL (3 mg) of reconstituted solution from 2 alteplase vials (i.e. will use 1½ vials).	
5. Inject 3 mg alteplase into a 50 mL mini bag of 0.9% NaCl.	▪ Minimum concentration alteplase = 0.06mg/mL in 0.9% NaCl.
6. Repeat Steps 4 and 5 for the second infusion bag.	
7. Access catheter lumen following Procedure 30.30.02 *Accessing and Locking Dialysis Central Venous Catheter (Anticoagulant/Thrombolytic/ Antibiotic Locking) or 30.20.04 Use of Closed Needleless Access device with Hemodialysis Central Venous Catheters (CVC)*.	
8. Flush each lumen with 10 mL 0.9% NaCl.	
9. Infuse both mini bags at the same time, one into each catheter lumen at 17 mL/hr (i.e. over approximately 3 hours) using the infusion pumps.	▪ Monitor blood pressure, heart rate, and temperature prior to start of infusion then monitor blood pressure and heart rate every 30 minutes x 2. ▪ Monitor patient for signs of allergic reactions (i.e. pruritus, edema). There is a very low risk of hypersensitivity reactions (<0.02%).
10. Flush both catheter lumens with 10 mL 0.9% NaCl to ensure patient receives full dose of alteplase.	▪ Monitor the patient for any signs of bleeding, particularly at any sites of recent trauma or venipuncture. Risk of bleeding is minor due to smal dose of alteplase used (6 mg).
11. Initiate dialysis or lock catheter per procedure 30.20.02 *Accessing and Locking Dialysis Central Venous Catheter or 30.20.04 Use of Closed Needleless Access device with Hemodialysis Central Venous Catheters (CVC)*.	

DOCUMENTATION:

- PRN Medication Administration Record
- Integrated Progress Notes
    - Time of administration
    - Blood flow rate prior to alteplase administration (if applicable)
    - Blood flow rate after alteplase administration

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POLICY & PROCEDURE DEVELOPERS:

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