



MANITOBA RENAL PROGRAM

<ul style="list-style-type: none"> Intraperitoneal tPA for Obstructed Peritoneal Dialysis Catheters 	SECTION 40.10 Peritoneal Dialysis
	CODE 40.10.07
AUTHORIZATION <ul style="list-style-type: none"> Professional Advisory Committee, Manitoba Renal Program Nursing Practice Council, St. Boniface Hospital (pending) 	EFFECTIVE DATE October 2015
	REVISION DATE November 2017

PURPOSE:

1. Tissue plasminogen activator (t-PA/alteplase/Cathflo®) is used to restore patency to peritoneal dialysis (PD) catheters obstructed by fibrin. It is the physician's responsibility to determine if t-PA is an appropriate treatment for individual patients.

POLICY:

1. The administration of t-PA into a peritoneal dialysis catheter requires a physician order.
2. Peritoneal Dialysis nurses and Registered Nurses (RN) and Licensed Practical Nurses (LPN) who have received education and training and who are competent may perform this procedure.
3. Notify the Nephrologist if the catheter remains plugged after the procedure.

CRITERIA:

- Documented difficulty draining and or filling in the absence of kinks, tubing pressure, closed clamps, constipation.
- Catheter has been flushed initially with dialysate, heparin or normal saline with heparin with no resolution in the obstruction.
- Transfer set has been changed.
- Abdominal x-ray has ruled out malposition of catheter or constipation.

POTENTIAL HAZARDS:

- Bleeding, Allergic Reaction.
- Use cautiously in patients with: Active internal bleeding (e.g. Intracranial bleeding), recent major surgery, recent trauma; severe uncontrolled hypertension, thrombocytopenia, recent puncture of non-compressible vessel.
- Treatment of infected hemodialysis catheters has led to release of localized infection into systemic circulation.

EQUIPMENT:

- 3 vials tPA (Alteplase) [2mg per 2 mL vial] (Prepare just before use)
- Sterile water for injection (without bacteriostat)
- 3 -3mL syringes
- 2 - 10 mL syringes
- 1 - 2 litre bag of dialysate
- 2 MiniCaps (second MiniCap in case of contamination)
- 2 Clamps
- 4 -18g blunt needles

PROCEDURE:

1. Check if patient has a history of active bleeding or platelets less than 135×10^9 /Litre. If so, notify physician prior to instillation of Alteplase.
2. Perform Hand Hygiene.
3. Using separate 3 mL syringes, inject 2.2 mL of Sterile Water for Injection into each 2 mg vial of tPA. Gently swirl the contents (DO NOT SHAKE) until the contents are dissolved.
4. Draw up 6 mg (6 mL) of alteplase into a 10 mL luer lock syringe. (2 mL from each vial).
5. Using sterile technique, instil 6 mL (or the amount equal to the exact priming volume of the PD catheter PLUS transfer set [2mL]) of tPA (alteplase) through the transfer set into the peritoneal catheter lumen.
6. Close transfer set clamp. Apply MiniCap.
7. Allow to dwell for 1-2 hours (as indicated on physician's order).
8. Perform hand hygiene
9. Ensuring sterile technique attach 10 mL syringe, open transfer clamp and Aspirate tPA from catheter lumen.
10. Attach appropriate dialysate bag and flush with 1-2 litres of dialysate per physician's order (see 40.10.05 *Peritoneal Catheter Flush*). Drain immediately.
11. If unable to aspirate t-PA, or PD catheter remains obstructed, contact nephrologist for further intervention.

KEY POINT:

- Direct the diluent stream into the powder. Slight foaming is expected; let the vial stand undisturbed to allow large bubbles to dissipate.
(Final Concentration: 1 mg/mL)

NOTES:

- Excessive pressure must be avoided when alteplase is injected into the PD catheter since it could rupture the catheter.

- During attempts to determine catheter occlusion, vigorous suction must be avoided (this may cause damage to the peritoneal membrane or collapse of the catheter).
- Systemic absorption of alteplase across the peritoneal membrane is unknown therefore it should be completely removed after the dwell, with subsequent flush of the peritoneal cavity with dialysate.

DOCUMENTATION:

- Integrated Progress Notes section of the renal chart
- PRN Medication Administration Record (MAR)
- Electronic Patient Record (EPR) (if inpatient).
- Adapted from London Health Sciences Centre Renal Program (Jan. 2002) and University Health Network Home Peritoneal Dialysis Unit (2008).

REFERENCES:

Cathflo® (alteplase, recombinant) [product monograph]. Mississauga (ON): Hoffmann-La Roche Limited; March 6, 2013.

CHMC-Children's Hospital Medical Center. Use of Tissue Plasminogen Activator in Obstructed Peritoneal Dialysis Catheters. *Dialysis & Transplantation*, 2001:104-108.

Shani MM, Mukhtar KN, Boorgu R, Leehey DJ, Popli S, Ing TS. Tissue plasminogen activator can effectively de clot peritoneal dialysis catheters (letter). *Am J Kid Dis* 2000; 36(3):675-6.

Zorzanello, M.M. et al. Use of tissue plasminogen activator in peritoneal dialysis catheters: A literature review and one center's experience. *Nephrology Nursing Journal*, 2006; 31(5):534-537.