POLICY

This protocol will be followed when heparinizing a peritoneal dialysis (PD) catheter. Two nurses are required for this protocol.

This is a Beyond Entry Level Competency that requires initial certification and annual recertification.

Initial certification requires:
  : knowledge attainment through self directed learning package (see Appendix A)
  : facilitated hands on skills lab
  : Precepted skills application and competency verification

Recertification requires:
  : annual policy review
  : annual hands on skills lab review

GUIDING PRINCIPLES AND VALUES

Heparin instillation into a peritoneal catheter optimizes patency of a peritoneal dialysis catheter when dialysis treatment is on hold.
A physician's order is required to heparinize a peritoneal catheter. The order may direct to instill heparin into the peritoneal catheter as per policy.

The use of sterile technique when adding or changing the heparinizing a PD catheter, reduces the risk of infection.

Always work in a clean environment and on clean surfaces. Encourage as few people in the room as possible during the procedure.

Always protect connection points from contamination, prioritizing the patient catheter end. Tape all PD connection points to minimize risk of accidental contamination.

Never force fluid into the catheter. If meeting resistance, stop procedure immediately and notify a physician. If a hard flush is ordered requiring pressure or force via a syringe it must be performed by a physician.

Never draw back on syringe as this may pull tissue back into the catheter.

**PROCEDURE**

The PD catheter must be heparinized on a regular schedule according to the following procedure.

- Initial heparinization of the PD catheter is performed in the OR.
- If there is no dialysis treatment for greater than 48 hrs, the PD catheter is to be heparinized.
- If dialysis treatment continues to be held, then heparinize weekly x 3, then monthly.
- If the patient is experiencing active bleeding check with nephrologist regarding heparin. Otherwise, the concentration of heparin to be used is based on patient weight:
  - less than 4 kg use 10 units/mL
  - 4-10 kg use 100 units/mL
  - greater than 10 kg use 1000 units/mL
- Never force fluid into patient’s catheter. Never draw back on syringe as this may pull tissue back into catheter. If meeting resistance, stop and notify physician.

**Instillation of heparin into the PD catheter can be performed two ways:**

1. Instilling Heparin into a PD Catheter With The Transfer Set or Stay Safe Extension Set connected
2. Instilling Heparin into a Capped Off PD Catheter
Volume required:

: catheter with no transfer set – instill 3mL
: catheter with transfer set – instill 6mL
: catheter with low volume stay safe catheter extension luer lock set 60 cm – instill 7 mL

Equipment

mask(s)
stereo gloves
gown(s)
heparin solution (see physician’s order)
PD catheter clamp
alcohol swabs
sterile dressing tray
sterile prefilled 10 mL NaCl 0.9% syringe
10 mL syringe
blunt needle

In addition:

*For heparinizing at the catheter adapter connection only:*

- Health center approved antiseptic solution (see Appendix C)
- Locking Cap

*For heparinizing at the catheter with the extension/transfer set still in place:*

- Minicap or stay safe cap

*For extension set for low volume manual PD ONLY:*

- health center approved antiseptic solution (Appendix C)
- 1 mL sterile syringe

Procedure

1. When heparinizing a catheter at the catheter adapter connection site:

1.1 Gather supplies.
1.2 Mask, gown and prepare tray.

1.3 Nurse #1 & #2 perform hand hygiene. Nurse #1 puts on sterile gloves.

1.4 Nurse #2 cleans vial of heparin with alcohol swab. Nurse number #1 draws up 3 mL of the appropriate concentration of heparin solution in a 10 ml syringe as ordered by a physician/nephrologist. Remove needle and place back in tray.

1.5 **If it is required to remove a catheter extension tubing:** Nurse # 2 ensures clamp is closed on extension tubing and on patient’s PD catheter, removes tape from connection between patient catheter and extension tubing.

   Place sterile towel under catheter. Use sterile gauze to hold patient’s catheter. Scrub connection site for with antiseptic solution for 30 seconds and then let dry for 30 seconds, Dry with sterile gauze and remove extension tubing or cap.

   **If a locking cap for titanium adapter is in place,** Nurse #2 ensures catheter clamp is closed and removes tape between catheter adapter and cap. Scrub connection between cap and catheter for 30 seconds; allow 30 seconds to dry. Using sterile gauze, Nurse #1 removes cap.

1.6 Nurse #1 attaches 10 mL pre-filled NaCl 0.9% syringe to adaptor on patient’s catheter. Nurse #2 unclamps catheter clamp. Nurse #1 slowly flushes with NaCl 0.9% solution.

1.7 Nurse #2 clamps patient’s catheter with catheter clamp.

1.8 Nurse #1 removes saline syringe and attaches 10 mL syringe with heparin.

1.9 Nurse #2 unclamps catheter clamp and Nurse #1 slowly flushes in 3 mL of heparin.

   Nurse #2 clamps catheter clamp.

1.10 Nurse #1 removes syringe and adds locking cap.

1.11 Tape connection and anchor patient’s catheter.

**2. When the catheter is being heparinized through a transfer set or extension set:**

   2.1 Gather supplies.

   2.2 Mask, gown and prepare tray.

   2.3 Nurse #1 & #2 perform hand hygiene. Nurse #1 puts on sterile gloves.

   2.4 Nurse #2 cleans vial of heparin with alcohol swab. Nurse number #1 draws up the **determined volume** (to fill catheter and extension set) of the appropriate concentration.
concentration of heparin solution in a 10 ml syringe as ordered by a physician/nephrologist. Remove needle and place back in tray.

2.5 Nurse #2 ensures clamp is closed on extension tubing or transfer set and PD catheter clamp is on patient's PD catheter.

2.6 Nurse #1 places sterile towel under catheter and using sterile gauze to remove the minicap from the transfer set OR stay safe cap from extension set, and attaches the saline syringe to the end of the transfer/extension set. Next, open the transfer/extension set clamp and catheter clamp, and instill saline gently. Close clamp on extension/transfer set.

2.7 Nurse #1 removes saline syringe from transfer/extension set and attaches heparin syringe. Next open clamp and infuse heparin gently. Close the transfer/extension clamp and catheter clamp.

2.8 Remove the syringe from the transfer/extension set. Immediately apply the new Minicap to the transfer set OR stay safe cap to the extension set. **Note: If using a stay safe cap,** there will no longer be a pin in place to puncture the povidone-iodine in the cap, therefore add povidone iodine to well of extension tubing using the 1 mL syringe prior to adding cap.

2.9 Tape connections and anchor patient's catheter.

2.10 **Change the Mini-cap/StaySafe cap weekly when the catheter is not in use.**

**REFERENCES**


Baxter (August 2012). The HOME CHOICE and HOME CHOICE PRO APD Systems: Patient at Home Guide


RELATED DOCUMENTS

**Policies**

- Infection Control Policy - 201.1 - Application of Routine Practices
- Infection Control Policy - 205.2 - Hand Hygiene

Capital Health Interdisciplinary Clinical Manual # CC 50-065
Peritoneal Dialysis (PD); Care of the Patient Receiving

Peritoneal Dialysis Policy. BC Children’s Hospital, Feb 2012
DEFINITIONS

*Peritoneal Dialysis (PD)*: A form of dialysis that uses the lining of the abdomen (peritoneal membrane), as a filter to remove waste products from the blood. A dialysis catheter is placed into the peritoneal cavity prior to initiation of dialysis therapy. Dialysate (dialysis solutions) is introduced into the peritoneal cavity via the PD catheter as prescribed by physician.
Appendix B

Peritoneal Dialysis Learning Activities Pre Workshop

Go to ‘eSource Learning’.

Click on Clinical Services….Children’s Health….. Oncology/Hematology/Nephrology…. Peritoneal Dialysis

Click on the Learning Modules and Resources.

**Review the listed activities in the following order:**

**Modules (PowerPoint presentations):**

1. Care of hospitalized PD patient
2. Chronic Kidney Disease - Pediatrics: Children Have Kidney Failure Too
3. Chronic Kidney Disease: Nursing Guidelines for Patient Education (Handout version)

**Fact sheets:**

1. Pediatric ESRD- Chronic Kidney Disease
2. Pediatric ESRD- Peritoneal Dialysis
3. Anemia
4. Bone Mineral Metabolism

Note that all listed learning activities come from the American Nephrology Nurses Association (ANNA) [https://annanurse.org/](https://annanurse.org/); a leader in Nephrology nursing practice for North America.
Appendix C

Health center approved antiseptic swab stick- 2% chlorhexidine and 70% alcohol swab stick.

Health Centre Approved Antiseptic Solution: povidone-iodine

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REPLACING THE FOLLOWING DISTRICT HEALTH AUTHORITY POLICIES/VERSION HISTORY

(LIST ON THE LAST PAGE FOLLOWING THE APPENDICES)

* * *
District Health Authority/IWK Policies Being Replaced

(Please List)

Version History

(To Be Completed by the Policy Office)

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