

PERITONEAL DIALYSIS (PD) – INTRAPERITONEAL HEPARIN ADMINISTRATION

<p>Cross References (including NSW Health/ SESLHD policy directives)</p>	<p>NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities NSW Health PD2019_058 High-Risk Medicines Management Policy NSW Health PD2017_013 Infection Prevention and Control Policy NSW Health PD2017_026 Clinical and Related Waste Management for Health Services Australian Commission on Safety and Quality in Health Care National Standard for User Applied labelling of Injectable Medicines, Fluids and Lines NHMRC Australian Guidelines for the prevention and control of Infection in Healthcare SGH-TSH CLIN027 Aseptic Technique - Competency and Education Requirements SGH CLIN442 Peritoneal Dialysis - Peritonitis Management and Treatment SGH CLIN538 Peritoneal dialysis Catheter (PDC): Poor Flow/No Flow Management SGH CLIN443 Peritoneal Dialysis (PD) – Intraperitoneal Additives and Antibiotics SGH Renal WPI 063 Peritoneal Dialysis –Fluid Specimen Collection via CAPD Freeline Solo Exchange SGH Renal WPI 217 Continuous Ambulatory Peritoneal Dialysis (CAPD) Freeline Solo Exchange Procedure SGH Renal WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine</p>
<p>1. What it is</p>	<p>A clinical business rule to ensure the administration of intraperitoneal Heparin is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety</p>
<p>2. Risk Rating</p>	<p>Medium</p>
<p>3. Employees it Applies to</p>	<p>Registered Nurses (RN) trained in peritoneal dialysis Medical Officers (MO) trained in peritoneal dialysis</p>

4. Process

Refer to [SGH CLIN443 Peritoneal Dialysis \(PD\) – Intraperitoneal Additives and Antibiotics](#)

4.1 RECOMMENDED INTRAPERITONEAL DOSE AND USAGE

- Heparin is recommended to be added to the dialysate to:
 - Maintain the patency of a new PD catheter (< 3 weeks from time of insertion)
 - Resolve a blocked PD catheter
 - Dissolve fibrin formation on PD effluent
- Note: Monitor patient for bleed or bloody PD effluent as an adverse effect from the use of Heparin
- Intraperitoneal Heparin dose is: 500 units in every 1 Litre PD fluid

- Intraperitoneal Heparin must be prescribed on eMEDs/medication chart, it is not nurse initiated.

4.2 DEVICES

4.2.1 Equipment

- Trolley
- Alcohol swabs
- Blue clamp

4.2.2 Key parts

- Heparin 5000units in 5 mL ampoule
- Drawing-up needle (18G)
- 21 G needle
- 5 mL syringe
- Minicap
- PD fluid

4.2.3 Key site

- Rubber bung on PD fluid
- Abdominal PD catheter

4.3 Procedure

1. Warm the selected PD fluid on the warmer or PD machine
 - a. Select appropriate PD fluid strength by conducting a fluid assessment on patient 30 minutes prior to PD procedure
 - b. Note: PD fluid takes 30 minutes to warm.
2. Ensure the “5 Rights” of Principles for Safe Medication Administration is observed with second person check
3. Perform hand hygiene
4. Identify and gather equipment and key parts for procedure
5. Check expiry dates on Heparin ampoule and PD fluid
6. Clean trolley/work surface with detergent
7. Perform hand hygiene
8. Don gloves
9. Prepare general aseptic field equipment and key parts near the patient’s bedside
10. Use the sharp edge of the blue clamp to open outer pouch of the dialysis bag. DO NOT USE SCISSORS OR KNIVES
11. Place the opened bag on top of the clean trolley and ensure the lines are facing up
12. Recheck the dialysis bag strength, volume, expiry, colour and for leakage
13. Prepare Heparin using aseptic technique ensuring all the key parts/sites are protected
 - a. Alcohol swab the Heparin ampoule/s and break top to open;
 - b. Attach drawing up needle to 5 mL syringe;
 - c. Aspirate all content from Heparin ampoule into the 5 mL syringe;
 - d. Replace drawing-up needle with 21G needle.

14. Administer Heparin into the dialysis fluid using aseptic technique ensuring all the key parts/sites are protected
 - a. Alcohol swab the rubber bung on dialysis fluid;
 - b. Push needle into the centre of the dialysis fluid bung and inject appropriate Heparin dosage into PD fluid (i.e. Heparin 1000 units / 1mL / 2 Litre PD fluid or Heparin 3000 units / 3 mL / 6 Litre PD fluid).
 - c. Note: For accidental piercing of the bag or the side of the bung, discard the bag and use a new PD fluid bag
15. Repeat procedure 13 and 14 to subsequent PD fluid bags
16. Administer Heparin intraperitoneally through APD or CAPD as per Renal SGH WPI 217 Continuous Ambulatory Peritoneal Dialysis (CAPD) Freeline Solo Exchange Procedure or Renal SGH WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine
17. Wear PPE as per NSW Health PD2017_013 Infection Prevention and Control Policy
18. Discard bag and lines in the clinical waste bin, discard needles in sharps bin
19. Remove gloves and PPE
20. Perform hand hygiene
21. Clean trolley after use and perform hand hygiene
22. Sign and co-sign the medication chart
23. Document the procedure on the PD chart and patient notes
24. Handover to the next shift

5. Keywords	Peritoneal Dialysis, Heparin, PD catheter, Blocked PD catheter, Fibrin, Peritonitis
6. Functional Group	Renal, Peritoneal Dialysis
7. External References	<p>Ansari, N. (2011). Peritoneal Dialysis in Renal Replacement Therapy for Patients with Acute Kidney Injury. <i>International Journal of Nephrology</i> [cited 2015 March]; Article ID 739794, 10 pages; Available from http://dx.doi.org/10.4061/2011/739794</p> <p>Campbell, D. J., Johnson, D. W., Mudge, D. W., Gallagher, M. P., & Craig, J. C. (2014). Prevention of peritoneal dialysis-related infections. <i>Nephrology Dialysis Transplantation</i>. doi: 10.1093/ndt/gfu313</p> <p>Cho, Y., Boudville, N., Palmer, S. C., Chow, J. S. F., Hawley, C. M., Jose, M. D., . . . Johnson, D. W. (2018). Practice of Peritoneal Dialysis Catheter Flushing in Australia and New Zealand: Multi-Center Cross-Sectional Survey. <i>38(2)</i>, 98-103. doi:10.3747/pdi.2017.00108</p> <p>Crabtree, J. H., Shrestha, B. M., Chow, K.-M., Figueiredo, A. E., Povlsen, J. V., Wilkie, M., . . . Dor, F. J. M. F. (2019). Creating and Maintaining Optimal Peritoneal Dialysis Access in the Adult Patient: 2019 Update. <i>39(5)</i>, 414-436. doi:10.3747/pdi.2018.00232</p> <p>Li, P. K., Szeto, C.-C., Piraino, B., de Arteaga, J., Fan, S., Figueiredo, A. E., . . . Johnson, D. W. (2016). ISPD Peritonitis Recommendations: 2016 Update On Prevention And Treatment. <i>Peritoneal Dialysis International</i>. doi: 10.3747/pdi.2016.00078</p> <p>Sifil, A., Mermut, C., Yenicieroglu, Y., Cavdar C., Gumustekin, M., Celik, A., Yuksel, F., and Camsari, T. (2003). Intraperitoneal and subcutaneous pharmacokinetics of low molecular weight heparin in continuous ambulatory peritoneal dialysis patients. <i>Advances in Peritoneal Dialysis</i>, 19; 28-30. PubMed PMID: 14763030</p>

SGH CLIN380 Clinical Business Rule

	Strazdins, V., Watson, A., & Harvey, B. (2004). Renal replacement therapy for acute renal failure in children: European Guidelines. <i>Pediatric Nephrology</i> , 19(2), 199-207. doi: 10.1007/s00467-003-1342-7
8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)	Not applicable
9. Implementation and Evaluation Plan Including education, training, clinical notes audit, knowledge evaluation audit etc	Inservices Publication on SGSHHS CIBR intranet page
10. Knowledge Evaluation	Q1: When is intraperitoneal Heparin required? A: To dissolve fibrin in PD effluent, unblock PD catheter and maintain a new PD catheter's patency. Q2: What is the adverse effect of Heparin? A: Peritoneal bleed Q3: Is IP Heparin nurse-initiated? A: No. IP heparin must be prescribed on eMeds/medication chart by a medical officer
11. Who is Responsible	Director of St George and Sutherland Renal Service. Nursing Unit Manager, Dialysis Unit

Approval for Peritoneal Dialysis (PD) – Intraperitoneal Heparin Administration	
Specialty/Department Committee	Committee title: Peritoneal Dialysis Committee Chairperson name/position Franziska Pettit, Staff Specialist Date 15.05.20
Nurse Manager	Name/position: Christine Day, Nurse Manager Medicine Date: 21.05.20
Medical Head of Department	Name /position: George Mangos, Department Head Renal Services Date: 20.05.20
Safe Use of Medicines Committee (SGH)	Chairperson's Name: A/Prof Winston Liauw Date: 03.08.20
Contributors to CIBR development e.g. CNC, Medical Officers (names and position title/specialty)	Franziska Pettit, Staff Specialist

Revision and Approval History

Date	Revision number	Author (Position)	Revision due
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SGH CLIN380 Clinical Business Rule

Feb 2017	0	Anna Claire Cuesta (PD CNC)	Feb 2020
May 2020	1	Anna Claire Cuesta (PD CNC)	May 2023

General Manager's Ratification

Name: Paul Darcy (SGH)

Date: 29.07.20