

PERITONEAL DIALYSIS (PD) – INTRAPERITONEAL POTASSIUM CHLORIDE 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 CLIN 345 Peritoneal Dialysis - Inpatient Management SGH CLIN442 Peritoneal Dialysis - Peritonitis Management and Treatment SGH CLIN443 Peritoneal Dialysis (PD) – Intraperitoneal Additives and Antibiotics SGH Renal WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine SGH Renal PD WPI 144 Peritoneal Dialysis (PD) - Management of patients requiring intermittent peritoneal dialysis</p>
<p>1. What it is</p>	<p>A clinical business rule to ensure the administration of intraperitoneal Potassium Chloride 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

- It is recommended to replace Potassium Chloride intraperitoneally due to the rapid loss of Potassium Chloride during ≥ 24 hour intermittent PD (IPD) therapy.
- Intraperitoneal Potassium Chloride is given for ≥ 24 hour IPD therapy only.
- Intraperitoneal Potassium Chloride is not proven effective in APD or CAPD therapy.
- Intraperitoneal Potassium Chloride must be prescribed on eMeds/medication chart, it is not nurse initiated.
- Serum Potassium level must be checked.
- Intraperitoneal Potassium Chloride dose:

Serum Potassium (mmol/L)	K added / L	K added / 5 L
Greater than or equal to 5mmol	nil	nil
Less than 5mmol and greater than 3mmol	3mmol / L	18mmol / 6 L
Less than or equal to 3mmol	4mmol / L	24mmol / 6 L

4.2 DEVICES

4.2.1 Equipment

- Trolley
- Alcohol swabs
- Blue clamp

4.2.2 Key parts

- Potassium Chloride 10 mmol in 10 mL ampoule
- Drawing-up needle (18G)
- 21 G needle
- 10 mL syringe
- 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 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 Potassium Chloride 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 Potassium Chloride using aseptic technique ensuring all the key parts/sites are protected
 - a. Alcohol swab the Potassium Chloride ampoule/s and break top to open;
 - b. Attach drawing up needle to 10 mL syringe;
 - c. Aspirate all content from Potassium Chloride ampoule into the 10 mL syringe;
 - d. Replace drawing-up needle with 21G needle.
14. Administer Potassium Chloride 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 Potassium Chloride dosage into PD fluid (i.e. Potassium 3mmol / 3mL / 1 Litre PD fluid or Potassium 18mmol / 18 mL / 6 Litre PD fluid).
 - c. Note: For accidental piercing of the bag or the side of the bung , use a new dialysis fluid
15. Repeat procedure 13 and 14 to subsequent PD fluid bags
16. Set-up PD machine as per Renal SGH WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine
17. Administer Potassium Chloride intraperitoneally through ≥ 24 hour IPD program only as per Renal PD SGH WPI 144 Peritoneal Dialysis (PD) - Management of patients requiring intermittent peritoneal dialysis
18. Wear PPE as per NSW Health PD2017_013 Infection Prevention and Control Policy
19. Discard used needles & syringes as per NSW Health PD2017_026 Clinical and Related Waste
20. Remove gloves and PPE
21. Perform hand hygiene
22. Clean trolley after use and perform hand hygiene
23. Sign and co-sign eMeds/medication chart
24. Document the procedure on the PD chart and patient notes
25. Handover to the next shift

5. Keywords	Peritoneal Dialysis, Potassium, Hypokalaemia
6. Functional Group	Renal, Peritoneal Dialysis
7. External References	<p>Amirmokri, P., Morgan, P., & Bastani, B. (2007). Intra-peritoneal administration of potassium and magnesium: a practical method to supplement these electrolytes in peritoneal dialysis patients. <i>Renal Failure</i>, 29(5):603-5. PMID: 17654324</p> <p>Glavinovic, T., Hurst, H., Hutchison, A., Johansson, L., Ruddock, N., & Perl, J. (2020). Prescribing high-quality peritoneal dialysis: Moving beyond urea clearance. <i>Peritoneal Dialysis International</i>, 40(3), 293–301. https://doi.org/10.1177/0896860819893571</p> <p>Wang, A. Y. M., Brimble, K. S., Brunier, G., Holt, S. G., Jha, V., Johnson, D. W., . . . Pecoits-Filho, R. (2015). ISPD Cardiovascular and Metabolic Guidelines in Adult Peritoneal Dialysis Patients Part I – Assessment and Management of Various Cardiovascular Risk Factors. 35(4), 379-387. doi:10.3747/pdi.2014.00279</p>

SGH CLIN381 Clinical Business Rule

	<p>Xu, Q., Xu, F., Fan, L., Xiong, L., Li, H., & et al. (2014) Serum Potassium Levels and Its Variability in Incident Peritoneal Dialysis Patients: Associations with Mortality. <i>PLoS ONE</i> 9(1): e86750. doi:10.1371/journal.pone.0086750</p> <p>Zanger, R. (2010). Hyponatremia and hypokalemia in patients on peritoneal dialysis, <i>Semiars in Dialysis</i>, 23(6):575-580</p>
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	<p>Inservices</p> <p>Publication on SGSHHS CIBR intranet page</p>
10. Knowledge Evaluation	<p>Q1: When is intraperitoneal Potassium Chloride required?</p> <p>A: Intraperitoneal Potassium Chloride is required for patients on \geq 24 hour IPD therapy when serum Potassium level is less than 5 mmol.</p> <p>Q2: What is the recommended intraperitoneal Potassium Chloride dosage?</p> <p>A: 3 mmol Potassium Chloride per litre of dialysis fluid for patients on > 24 hour IPD therapy with serum Potassium level 3.1 - 5 mmol/L. Or 4mmol Potassium Chloride per litre of dialysis fluid for patients on > 24 hour IPD therapy with serum potassium level \leq3 mmol/L.</p> <p>Q3: What type of peritoneal dialysis can intraperitoneal Potassium Chloride be administered?</p> <p>A: For > 24 hour IPD therapy only. <u>Do not</u> give intraperitoneal Potassium Chloride in APD or CAPD therapy.</p>
11. Who is Responsible	<p>Director of St George and Sutherland Renal Service.</p> <p>Nursing Unit Manager, Dialysis Unit</p>

Approval for Peritoneal Dialysis (PD) – Intraperitoneal Potassium Administration	
Specialty/Department Committee	Committee title: Peritoneal Dialysis Committee Chairperson name/position Franziska Pettit, Staff Specialist Date: 20.05.20
Nurse Manager	Name/position: Christine Day, Nurse Manager Medicine Date: 28.05.20
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
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