

**PERITONEAL DIALYSIS (PD) – INTRAPERITONEAL LIGNOCAINE / LIDOCAINE OR  
SODIUM BICARBONATE ADMINISTRATION FOR DRAIN OR INFLOW PAIN  
MANAGEMENT SGH**

<b>Cross References</b> (including NSW Health/ SESLHD policy directives)	<a href="#">NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities</a> <a href="#">NSW Health PD2017_013 Infection Prevention and Control Policy</a> <a href="#">NSW Health PD2014_024 Patient Identification Bands</a> <a href="#">NSW Health PD2016_058 User applied Labelling of Injectable Medicines, Fluids and Lines</a> <a href="#">Australian Commission on Safety and Quality in Health Care - National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines</a> <a href="#">Australian Commission on Safety and Quality in Healthcare: NIMC User Guide Feb 2016</a> <a href="#">NHMRC Australian Guidelines for the Prevention and Control of Infection in Healthcare</a> <a href="#">SESLHDPR/354 Antiseptics and Disinfectants</a> <a href="#">SESLHDPD/140 Waste management</a> <a href="#">SGH-TSH CLIN027 Aseptic Technique - Competency and Education Requirements</a> <a href="#">SGSHHS CLIN191 Labelling injectable medicines, fluids and lines</a> <a href="#">WPI - Peritoneal Dialysis – CAPD Freeline Solo Exchange for Nurses</a> <a href="#">WPI - Peritoneal Dialysis – APD Set-up and Connection Procedure – HomeChoice Dialysis Machine</a> <a href="#">SGH CLIN Peritoneal Dialysis – Intraperitoneal Additives And Antibiotics</a>
<b>1. What it is</b>	A clinical business rule (CIBR) to ensure the administration of intraperitoneal lignocaine / lidocaine or sodium bicarbonate for PD related pain management is performed according to best practice guidelines reducing the risk of infection and ensuring patient safety
<b>2. Risk Rating</b>	Medium
<b>3. Employees it Applies to</b>	Registered Nurses (RN) trained in peritoneal dialysis Medical Officers (MO) trained in peritoneal dialysis

**4. Process**

Inflow and / or drain pain during PD or after PD catheter related procedure are usually self-limiting and may resolve within 3 months through remedial clinical actions i.e. increasing tidal volume, repositioning during dialysis, resolving constipation or oral analgesia. However, in some cases they persist and intraperitoneal (IP) sodium bicarbonate or lignocaine / lidocaine may be effective.

#### **4.1 RECOMMENDED INTRAPERITONEAL DOSE AND USAGE**

- Sodium Bicarbonate 8.4% (84 mg/mL or 1 mmol) or lignocaine / lidocaine 1% (10mg/mL) or Lignocaine / lidocaine 2% (20mg/mL) are recommended to be added to PD fluid to relieve drain or inflow pain during PD
- **Intraperitoneal Sodium Bicarbonate 8.4% (84 mg/mL or 1 mmol):** Initial dose of 2mL in every 1 Litre PD fluid. Maximum dose of 5mL in every 1 Litre PD fluid
  - For APD or intermittent PD (IPD): Initial dose of 12 mL in every 6 Litre PD fluid. Increase dosing if pain persists to a maximum of 30 mL per 6 Litre PD fluid
  - For CAPD: Initial dose of 4 mL in every 2 Litre PD fluid. Increase dosing if pain persists to a maximum of 10 mL per 2 Litre PD fluid
- **Intraperitoneal lignocaine / lidocaine 1% (10mg/mL) or lignocaine / lidocaine 2% (20mg/mL):** Maximum dose of 100mg/day
  - For APD or IPD: Initial dose is 2% lignocaine / lidocaine 1 mL in every 6 Litre PD fluid. Increase dosing if pain persists up to a maximum of 100 mg/day only
  - For CAPD: Initial dose is 1% lignocaine / lidocaine 1 mL in every 2 Litre PD fluid. Increase dosing if pain persists up to a maximum of 100 mg/day only
- Intraperitoneal Sodium Bicarbonate or lignocaine / lidocaine must be prescribed on a medication chart, it is not nurse initiated.
- NOTE: IP lignocaine / lidocaine or Sodium Bicarbonate may not be effective for drain pain related to the PD catheter tip position

#### **4.2 DEVICES**

##### **4.2.1 Equipment**

- Trolley
- Alcohol swabs
- Blue clamp

##### **4.2.2 Key parts**

- Lignocaine / lidocaine (1% or 2%) or Sodium Bicarbonate 8.4% (84 mg/mL or 1 mmol) ampoule
- Drawing-up needle (18G)
- 21 G needle
- 10 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 Homechoice machine
  - a. Select appropriate PD fluid strength by conducting a fluid assessment on patient 30 minutes prior to PD procedureNOTE: 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 sodium bicarbonate or lignocaine / lidocaine ampoules 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 injection ports are facing up
  12. Recheck the dialysis bag strength, volume, expiry, colour and for leakage
  13. Prepare Sodium Bicarbonate or Lignocaine / lidocaine using aseptic technique ensuring all the key parts/sites are protected as per SGH CLIN PD – Intraperitoneal Additives And Antibiotics
  14. Use a new needle with smaller bore (21 G needle) and carefully administer Sodium Bicarbonate or Lignocaine / lidocaine into the dialysis bag using aseptic technique ensuring all the key parts/sites are protected as per SGH CLIN PD – Intraperitoneal Additives And Antibiotics:
    - a. Alcohol swab the injection port on dialysis fluid and wait to dry prior to injecting medication
    - b. Push needle into the centre of the dialysis fluid injection port and inject appropriate Sodium Bicarbonate or Lignocaine / lidocaine dosage into PD fluid
- Note: For accidental piercing of the bag or the side of injection port, discard the bag and use a new PD fluid bag
15. Repeat procedure 13 and 14 to subsequent PD fluid bags
  16. Administer Lignocaine / lidocaine or Sodium Bicarbonate intraperitoneally through APD or CAPD as per PD WPIs
  17. After completion, wear PPE and discard equipment as per SESLHD SESLHDPD/140 Waste management
  18. Remove gloves and PPE
  19. Perform hand hygiene
  20. Clean trolley after use and perform hand hygiene
  21. Sign and co-sign the NIMC/medication chart
  22. Document procedure on the PD chart and clinical notes
  23. Handover to the next shift and inform PD team

<b>5. Keywords</b>	Peritoneal Dialysis, Drain pain, In-flow pain
<b>6. Functional Group</b>	Renal, Peritoneal Dialysis
<b>7. External References</b>	<p>Blake, P. (2014). Drain Pain, Overfill, and How They Are Connected. <i>Peritoneal Dialysis International : Journal of the International Society for Peritoneal Dialysis</i>, 34(4), 342–344. <a href="http://doi.org/10.3747/pdi.2014.00104">http://doi.org/10.3747/pdi.2014.00104</a></p> <p>Blake, P. G., Sloand, J. A., McMurray, S., Jain, A. K., &amp; Matthews, S. (2014). A multicenter survey of why and how tidal peritoneal dialysis (TPD) is being used. <i>Peritoneal Dialysis International</i>, 34(4), 458-460. doi: 10.3747/pdi.2013.00314</p> <p>Bunchman, T. E., &amp; Ballal, S. H. (1991). Treatment of inflow pain by pH adjustment of dialysate in peritoneal dialysis. <i>Peritoneal Dialysis International</i>, 11(2), 179-180</p> <p>Davis, I. D., Cizman, B., Mundt, K., Wu, L., Childers, R., Mell, R., &amp; Prichard, S. (2011). Relationship between drain volume/fill volume ratio and clinical outcomes associated with overfill complaints in peritoneal dialysis patients. <i>Peritoneal Dialysis International</i>, 31(2), 148-153. doi: 10.3747/pdi.2010.00012</p> <p>Davis, V., &amp; Lavandero, R. (1980). Nursing update. Part 2. Caring for the catheter carefully...before, during, and after peritoneal dialysis. <i>Nursing</i>, 10(12), 67-71.</p> <p>Dorval, M., Legault, L., Lessard, F., &amp; Roy, L. (2000). Practical aspects of the addition of sodium bicarbonate to peritoneal dialysate. <i>Peritoneal Dialysis International</i>, 20(6), 791-793.</p> <p>Fusshoeller, A., Plail, M., Grabensee, B., &amp; Plum, J. (2004). Biocompatibility pattern of a bicarbonate/lactate-buffered peritoneal dialysis fluid in APD: a prospective, randomized study. <i>Nephrology, Dialysis and Transplant</i>, 19(8), 2101-2106. doi: 10.1093/ndt/gfh326</p> <p>Kathuria P, Twardowski ZJ, Nichols WK. (2009) Peritoneal dialysis access and exit site care including surgical aspects. In: R Khanna, RT Krediet (eds), <i>Nolph and Gokal's Peritoneal Dialysis</i>, 3rd ed. Springer Science + Business Media, LLC, Chap. 14, pp. 371–446</p> <p>MIMS Australia; Application version 2.0.7 628 Data version 7 2017</p> <p>Peritoneal Dialysis Section: Intra-peritoneal medications – Lidocaine without epinephrine protocol; Professional Advisory Committee, Manitoba Renal Program and Nursing Practice Council, St. Boniface General Hospital; Winnipeg Regional Health Authority; Canada 2010</p> <p>Tranaeus, A. (2000). A long-term study of a bicarbonate/lactate-based peritoneal dialysis solution--clinical benefits. The Bicarbonate/Lactate Study Group. <i>Peritoneal Dialysis International</i>, 20(5), 516-523</p>
<b>8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)</b>	Not applicable

<b>9. Implementation and Evaluation Plan</b> Including education, training, clinical notes audit, knowledge evaluation audit etc	Inservices Publication on SGSHHS CIBR intranet page
<b>10. Knowledge Evaluation</b>	Q1: When is IP Lignocaine / lidocaine or Sodium Bicarbonate recommended? A: To relieve drain or inflow pain in PD Q2: When is IP Lignocaine / lidocaine or Sodium Bicarbonate not recommended? A: For drain pain related to the PD catheter tip position Q3: Is IP Lignocaine / lidocaine or Sodium Bicarbonate nurse-initiated? A: No. IP Lignocaine / lidocaine or Sodium Bicarbonate must be prescribed on a medication chart by a medical officer
<b>11. Who is Responsible</b>	Director of St George and Sutherland Renal Service. Nursing Unit Manager, Dialysis Unit

<b>Approval for PERITONEAL DIALYSIS (PD) – INTRAPERITONEAL LIGNOCAINE / LIDOCAINE or SODIUM BICARBONATE ADMINISTRATION (FOR DRAIN OR INFLOW PAIN MANAGEMENT)</b>	
<b>*Specialty/Department Committee</b>	Committee title: Peritoneal Dialysis Committee Chairperson name/position Franziska Pettit, Staff Specialist Date: 14.09.17
<b>*Nurse Manager</b>	Name/position: Sarah Massey, A/Nurse Manager Medicine 1 Date: 21.09.17
<b>*Medical Head of Department</b>	Name /position: A/Prof Ivor Katz, A/ Department Head Renal Services Date: 04.09.17
<b>*Drug and Therapeutics Committee (SGH)</b>	Chairperson's Name: A/Prof Winston Liauw Date: 13.11.17
<b>Contributors to CIBR development</b> e.g. CNC, Medical Officers (names and position title/specialty)	Ivor Katz, Staff Specialist Johneen Tierney, Director of Pharmacy

**Revision and Approval History**

Date	Revision number	Author (Position)	Revision due
September 2017	0	Anna Claire Cuesta (PD CNC)	September 2020

**General Manager's Ratification**

Name Leisa Rathborne Date: 06.12.17