

PERITONEAL DIALYSIS (PD) PATIENTS: PREPARATION FOR INVASIVE PROCEDURES OR SURGERY

Cross References (including NSW Health/ SESLHD policy directives)	SGH CLIN364 Peritoneal Dialysis Catheter (PDC) – Heparin Lock NSW Health PD2013_043 Medication Handling in NSW Public Health Facilities NSW Health PD2007_036 Infection Control Policy SGH WPI_053 Peritoneal Dialysis – 1L Flush on a PD Catheter SGH WPI Peritoneal Dialysis – Simple/Small Flush on a Peritoneal Dialysis Catheter
1. What it is	A clinical business rule (CBR) to describe the preparation required for patients on PD before an invasive procedure or surgery to reduce PD-related and post procedure complication and infection.
2. Risk Rating	Low
3. Employees it Applies to	Nurses and Medical Officers (MO) across St George Hospital

4. Process

4.1 Background

Peritonitis is a major complication of PD. Anecdotal and retrospective reports suggest patients on PD are at risk of having peritonitis as a complication after invasive procedures. Peritonitis can result from an invasive procedure through translocation or migration of bacteria by:

- Ascending (from gynaecologic source)
- Haematogenous (transient from dental procedure or intravascular device)
- Transmural (from the bowel wall)

Objective	Surgery / Procedure	Pre-Procedure Preparation
To reduce complications and risk of enteric infection	GIT and gynaecologic procedures <ul style="list-style-type: none"> ▫ Colonoscopy(+/- polypectomy) ▫ Endometrial biopsy ▫ ERCP ▫ Gastroscopy ▫ Gastrostomy ▫ Barium enema ▫ Hysteroscopy ▫ Liver biopsy ▫ Cholecystectomy ▫ Proctoscopy 	<ul style="list-style-type: none"> – Diet and Bowel preparation as instructed – Admitting team to notify renal team and PD nurses to review patient and to ensure dialysis fluid is drained prior to procedure – Renal team to determine if patient is clinically stable to skip APD or convert APD patients to CAPD the night before due to frequent loose motions – Administer prophylactic antibiotics as per 4.2 Antimicrobial prophylaxis recommendation (IV dose) – Recommence dialysis as usual after the procedure

Objective	Surgery / Procedure	Pre-Procedure Preparation
To reduce risk of infection	Invasive dental work i.e. tooth extraction, root canal treatment	<ul style="list-style-type: none"> - Dentist to administer prophylactic antibiotics 2 hours before the procedure as per 4.2 Antimicrobial prophylaxis recommendation (oral dose) - Continue dialysis as usual
To maintain PDC patency, reduce complications and reduce risk of enteric infection	Kidney transplantation	<ul style="list-style-type: none"> - Ensure dialysis fluid is drained prior to procedure - Heparin lock PDC as per PDC Heparin Lock CBR - Administer prophylactic antibiotics as per 4.2 Antimicrobial prophylaxis recommendation (IV dose)
To maintain PDC patency, reduce complications and reduce risk of enteric infection	Hernia repair	<ul style="list-style-type: none"> - Admitting surgical team will notify the renal team and PD nurses to review patient and to ensure dialysis fluid is drained prior to procedure - Administer prophylactic antibiotics as per 4.2 Antimicrobial prophylaxis recommendation (IV dose) - Heparin lock PDC as per PDC Heparin Lock CBR - Patient is to rest from PD, approximately 6-8 weeks post hernia repair. Rest period is to be determined by the surgeon - Whilst patient is resting from PD, nephrologist is to decide if PDC requires weekly or fortnightly 1Litre flush, small/simple flush or no flushing at all - Recommence dialysis as per surgeon's recommendation
To reduce complications and risk of enteric infection	PDC manipulation or reposition	<ul style="list-style-type: none"> - Empty the abdomen of dialysis fluid (if possible) prior to procedure. - Administer prophylactic antibiotics as per 4.2 Antimicrobial prophylaxis recommendation (oral or IV) - After the procedure – 1 Litre PDC flush to check patency - If PDC is not flushing/working – heparin lock PDC and refer to vascular surgeon for possible PDC replacement or reinsertion - If PDC is patent – recommence dialysis

4.2 Antimicrobial Prophylaxis Recommendation

4.2.1 Invasive GI or gynaecological procedures

- Ampicillin 2g + gentamicin 4mg/kg + IV metronidazole 500mg or oral metronidazole 400mg
- For patients with hypersensitivity (excluding immediate hypersensitivity) to penicillins cefazolin 2g plus IV metronidazole 500mg
- For patients with immediate hypersensitivity to penicillins use IV clindamycin 600mg plus gentamicin 4mg/kg

4.2.2 Dental procedures

- Amoxicillin 2g oral
- For patients with hypersensitivity (excluding immediate hypersensitivity) to penicillins use cephalexin 2g
- For patients with immediate hypersensitivity to penicillins use clindamycin 600mg 1 hour prior to procedure

4.2.3 Oral nystatin (500,000 units tablet QID po) whilst patient is on antibiotics as prophylaxis for fungal peritonitis

5. Keywords	Peritoneal dialysis, Antimicrobial, Prophylaxis, Antibiotics
6. Functional Group	Renal, Peritoneal Dialysis
7. External References	<p>CARI. (2004). PD catheter related infection. Retrieved March 3, 2010, from http://www.cari.org.au/dialysis_ptp_publ2004.php</p> <p>Li, P., Szeto, C., Piraino, B., Bernardini, J., Figueiredo, A., Gupta, A., et al. (2011) Peritoneal dialysis–related infections recommendations: 2010 update. <i>Peritoneal Dialysis International</i>, 30:393–423. [Erratum in: <i>Peritoneal Dialysis International</i>, 31:512]</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>MIMS. (2012). MIMS Online. http://www.ciap.health.nsw.gov.au/home.html</p> <p>Piraino, B., Bailie, G., Bernardini, J., Boeschoten, E., Gupta, A., Holmes, C., Kuijper E., Li, P., Lye, W., Mujais S, et al. (2005) Peritoneal dialysis-related infections recommendations: 2005 update. <i>Peritoneal Dialysis International</i>, 25: 107-131.</p> <p>Piraino, B., Bernardini, J., Brown, E., Figueiredo, A., Johnson, D. W., Lye, W.-C., et al. (2011). ISPD Position Statement on Reducing the Risks of Peritoneal Dialysis-Related Infections. <i>Peritoneal Dialysis International</i>, 31:614-630.</p> <p>Poortvliet W, Selten H, Raasveld MH, Klemm-Kropp M. (2010) CAPD Peritonitis after colonoscopy: follow the guidelines. <i>The Netherlands Journal of Medicine</i> 68:377-378.</p>

	<p>Strippoli, G., Tong, A., Johnson, D., Schena, F., & Craig, J. (2004) Antimicrobial agents to prevent peritonitis in peritoneal dialysis: a systematic review of randomized controlled trials. [Research Support, Non-U.S. Gov't Review]. <i>American Journal of Kidney Diseases</i>, 44(4):591-603.</p> <p>Yip, T., Tse, K., Lam, M., Cheng, S., Lui, S., Tang, S., et al. (2007). Risks and Outcomes of Peritonitis after Flexible Colonoscopy in CAPD Patients. <i>Peritoneal Dialysis International</i>, 27:560-564.</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	<ul style="list-style-type: none"> - Inservice education by PD CNC/nurses to 4South and Emergency Department - PD tutorial to Junior Medical Officers by the PD CNC at the beginning of renal rotation
10. Knowledge Evaluation	<p>Q1: Why are prophylactic antibiotics recommended for PD patients before an invasive procedure or surgery?</p> <p>A: To reduce the risk of PD-related and/or post procedure complication and infection</p> <p>Q2: What is the recommended prophylaxis?</p> <p>A: Oral nilstat whilst patient is on antibiotics and oral amoxicillin or IV ampicillin with IV gentamicin and possibly with oral Metronidazole</p> <p>Q3: How can peritonitis result from an invasive procedure or surgery?</p> <p>A: Through ascending, haematogenous and transmural migration or translocation of bacteria.</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) Patients: Preparation For Invasive Procedures Or Surgery	
*Specialty/Department Committee	Committee title: Peritoneal Dialysis Committee Chairperson name/position: Franziska Pettit, Staff Specialist Date: 29.09.16
*Nursing/Midwifery Co-Director	Name/position: Christine Day, Nurse Manager Medicine Date: 15.03.17
*Medical Co-Director	Name /position: Mark Brown, Department Head Renal Services Date: 06.11.16
*Drug and Therapeutics Committee (SGH)	Chairperson's Name: Winston Liauw Date: 28.08.17
Contributors to CIBR development e.g. CNC, Medical Officers (names and position title/specialty)	Shelley Tranter, CNC Renal Franziska Pettit, Staff Specialist

Revision and Approval History

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

General Manager's Ratification

Name Leisa Rathborne	Date: 01.09.17
----------------------	----------------