PD Procedures: Invasive Procedures
Preparing a PD Patient

BCRenal
Provincial Health Services Authority

1.0 Practice Standard

The Registered Nurse and or Licensed practical nurse working in peritoneal dialysis:

- Must be vigilant in asking patients about planned invasive procedures to ensure that appropriate program specific protocols can be implemented.
- Will contact the nephrologist for specific instructions to prepare the patient for an invasive procedure.
- Must consider the potential need for changes to dialysis therapy before/after the invasive procedure

ISPD peritonitis guideline recommendations: 2022 update on prevention and treatment suggest:

1. Drainage of PD fluid to keep the abdomen empty before endoscopic GI and invasive or instrumental gynaecological procedures.
2. Antibiotic prophylaxis prior to colonoscopy and invasive gynaecological procedures.

Procedures requiring PD patient to be empty or drained MAY include but not limited to:

- Abdominal ultrasound
- Cardiac catheterization/angiogram with contrast
- Cholangiogram
- Colonoscopy (sigmoidoscopy/proctoscopy)
- Abdominal CT scan
- Cystoscopy/upper GI
- Endoscopic retrograde cholangiogram (ERCP)
- Gastroscopy
- Gynecological procedures
- Iliac dopplers
- Stress test
- Abdominal MRI
- Biopsy (except skin)

Procedures not requiring PD Patient to be empty or drained may include but not limited to:

- Chest x-ray
- Echocardiogram
- ECG
- CT head
- EMG
- MRI (not abdominal)

2.0 Definitions and Abbreviations

Invasive procedures: include but not limited to gynaecological procedures, colonoscopy, hysteroscopy, esophageal stricture dilation, ERCP, dental work, cholecystectomy, and percutaneous endoscopic gastrostomy

Invasive dental procedures: manipulation of gingival tissue or of the periapical region of teeth, or perforation of the oral mucosa

GI: gastro intestinal

GU: genitourinary

3.0 Equipment

Not applicable.

4.0 Procedure and Rationale

	PROCEDURE	RATIONALE
1	Screen patients routinely at clinic to identify planned invasive procedures.	Identifies patients who may require specific preparation such as prophylactic antibiotics or abdomen emptying prior. Also increases patients awareness of importance of communicating planned invasive procedures.
2	Ensure program specific protocols are implemented with all identified invasive procedures. • Consider drainage of PD fluid before endoscopic GI and invasive instrumental gynaecological procedures (ISPD 2022) • Consider antibiotic prophylaxis prior to colonoscopy and invasive gynaecological procedures (ISPD 2022) Notify the nephrologist directly if further direction is required to prepare for an invasive procedure.	The administration of prophylactic antibiotics prior to dental, gastrointestinal gynaecological and genitourinary procedures can decrease the risk of peritonitis. Drainage of PD fluid to keep the abdomen empty minimizes risk of potential perforation and permits easy viewing of specific body areas and functioning. High fluid volumes in the abdomen may also compromise efficiency of bacterial killing by disrupting the volume to surface area ratio.
3	Provide appropriate patient teaching and patient care specific to the invasive procedure inclusive of special consideration for potential prophylactic antibiotic administration and emptying of the abdomen prior to the procedure.	

5.0 Patient Teaching Considerations

	PATIENT TEACHING	RATIONALE
1	The PD patient should be encouraged to inform the PD program of all procedures prior to the date of the procedure.	Identifies patients who may require specific preparation such as prophylactic antibiotics or abdomen emptying prior. Also increases patients awareness of importance of communicating planned invasive procedures.
2	Specific preparation prior to invasive procedures may include: • prophylactic antibiotics • abdomen may be emptied of fluid prior to all procedures involving the abdomen and pelvis	The administration of prophylactic antibiotics just prior to dental, gastro intestinal and genitourinary procedures can decrease the risk of peritonitis. Minimizes risk of potential perforation and permit easy viewing of specific body areas and functioning.

6.0 Document Considerations

Documentation to include:

- the type of invasive procedure
- date of procedure
- pre invasive procedure care prescribed
- patient instructions provided

7.0 Special Considerations: Interventional Guidelines

(does not replace individualized care and clinical expertise)

ISPD work group opinion (2005, 2011, 2022):

- ISPD 2022 update recommends that the abdomen be emptied of fluid before colonoscopy and gynaecological procedures.
- Endoscopic gastrointestinal and invasive or instrumental gynaecological procedures (gastroscopy, colonoscopy, hysteroscopy) may cause peritonitis in PD patients.
- Certain procedures – including colonoscopy, gastroscopy, cholecystectomy, hysteroscopy, dental work can lead to peritonitis. A recent retrospective study found that the risk of peritonitis after colonoscopy without antibiotic prophylaxis was 6.3%, .
- Most reported bacterial pathogens from gynaecological procedures are streptococcus, Escheria coli, enterococcus, straphylococcus and infrequently candida. Because of limited available data, there is no standardised recommendation of antibiotic choice and administration route. Consideration should be given to cover gram positive and gram negative organisms. Antibiotics for prophylaxis consideration: IV cefazolin or ceftriaxone before the procedure or oral cefadroxil 500 mg daily for 3 days. (1)
- Most episodes of peritonitis after colonoscopy are caused by E. coli. Intravenous prophylaxis choices may include cephalosporins (ceftriaxone or ceftazidime), amoxicillin-clavulanate, ampicillin-sulbactam, ampicillin plus aminoglycoside with out without metronidazole (1)
- Ampicillin 2 gm plus a single dose of aminoglycoside (gentamycin 5mg/kg) with or without metronidazole IV immediately prior to a GI endoscopic procedure may reduce peritonitis.
- A single oral dose of amoxicillin (2 gm) 30-60 minutes before extensive dental procedure is reasonable although there are no studies to support this approach
- Pediatric research findings are the same with reduced antibiotic dosing

8.0 References

1. Kam-Tao Li, P., Chow, K., Johnson, D., et al. ISPD peritonitis guideline recommendations: 2022 update on prevention and treatment. Peritoneal Dialysis International 2022; 42:2: 110-153
2. Piraino, B., Bailie, G., Bernardini, J. et al. ISPD position statement on reducing the risks of peritoneal dialysis related infections. Peritoneal Dialysis International 2011; 31: 614 – 630
3. Bender, F., Bernardini, J., Piraino, B. (2006) Prevention of infectious complications in peritoneal dialysis: best demonstrated practices. Kidney International 2006; 70: S44- S54
4. VGH policy and procedure. List of procedures requiring PD patient to be empty or drained. 2013
5. Warady, B., Bakkaloglu, S., Newland, J., et al. Consensus guidelines for the prevention and treatment of catheter related infections and peritonitis in pediatric patients receiving peritoneal dialysis: 2012 update. Peritoneal Dialysis International 2012; 32: S32 - S86
6. Koksal, A., Ramazani-Necessary, C., Antibiotic Prophylaxis in Gastrointestinal System Endoscopy. HSOA Journal of Gastroenterology & Hepatology Research 2019
7. Antibiotic prophylaxis for GI endoscopy guideline. 2015. www.giejournal. Volume 81,No.1.81-89

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11.0 Created

August 2017.

12.0 Reviewed and Updated

November, 2022