PERITONEAL DIALYSIS CATHETER (PDC) – BREAK-IN MANAGEMENT FOR PATIENTS REQUIRING URGENT PERITONEAL DIALYSIS WITH A NEWLY INSERTED PDC

Cross references	NSW Health PD2017_013 *Infection Prevention and Control Policy* NSW Health PD2017_026 *Clinical and Related Waste Management for Health Services* 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 CLIN364 *Peritoneal Dialysis Catheter (PDC) – Heparin Lock* SGH CLIN379 *Intraperitoneal Actilyse (Alteplase) Administration* SGH CLIN380 *Intraperitoneal Heparin Administration* SGH CLIN381 *Intraperitoneal Potassium Administration* SGH CLIN 414 *Peritoneal Dialysis Catheter (PDC) – Post insertion Catheter Care, Dressing and Management* SGH CLIN538 *Peritoneal dialysis Catheter (PDC): Poor Flow/No Flow Management* SGH WPI 137 *Peritoneal Dialysis Catheter (PDC) – Simple/Small Flush on Peritoneal Dialysis* Renal SGH WPI 216 *Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine* Renal SGH WPI 218 *APD Disconnection with Opticap Procedure*
1. Purpose	To ensure the break-in management of newly inserted PDCs is performed according to best practice guidelines reducing the risk of post-insertion complications or infection and ensuring patient safety

2. Background

Newly-inserted PDCs are rested for 2-3 weeks due to risks of PDC related complications (i.e. bleeding, blockage or leakage) and infection. However, some patients require dialysis urgently post insertion.

Low fill volume is the recommended break-in peritoneal dialysis (PD) regimen for new PDCs to reduce post-insertion complications and infection:

Therapy:	CCPD/IPD
Total Volume:	24000mL
Fill volume:	1000mL
Last fill:	0mL
Therapy time:	24 to 48 hours

Patient Activation Code for a 1L fill / 24 hour IPD program: 183 3624 545

2.1 Process

1. Patient is to be admitted or transferred and should remain in 4South for the break-in PD therapy for close monitoring
2. Upon admission in 4S, ward nurse should attend to and document routine observations and weight in eMR Powerchart. Note: Weight should be attended before dialysis
3. Ward nurse to notify the renal and PD team upon patient's arrival to the ward
4. Renal team to complete admission documentation (if necessary), fluid assessment and predialysis bloods i.e. FBC, UEC including serum potassium
5. Renal team to review patient, ascertain fluid removal target and to decide dialysis strength and additives required. Renal team to inform PD and ward nurses after review.
6. PD team or ward nurse to document the break-in IPD program, required dialysate strength, fluid removal target and additives on the PD chart
7. Ward nurse to attend to inpatient care and dialysis as per SGH CLIN 345 Peritoneal Dialysis – Inpatient Management
8. Commence break-in PD therapy immediately as per Renal SGH WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine
9. Administer intraperitoneal potassium as per SGH CLIN381 Intraperitoneal Potassium Administration
10. Administer intraperitoneal heparin as per SGH CLIN380 Intraperitoneal Heparin Administration
11. Ward nurse to monitor:
    a. Midline abdominal wound and PDC exit site for signs of bleeding and leakage whilst on dialysis
    b. Bowel movement. Administer aperients or laxatives as ordered if constipated i.e. lactulose, movicol, bisacodyl and/or coloxyl with senna
    c. Fluid balance. Ascertain current fluid restriction and target fluid removal
12. For break-in PD therapy **without** complications: Continue break-in PD regimen for 72 hours then titrate to higher fill volumes until 2 Litre fill volume is achieved.
13. For break-in PD therapy with complications:
    a. **For leaking PDC exit site** – stop dialysis, notify the PD team and renal team, change dressing as per SGH CLIN 414 Peritoneal Dialysis Catheter (PDC) – Post insertion Catheter Care, Dressing and Management, rest PDC for 24-48 hours then resume same break-in PD regimen
    b. **For persistently leaking PDC exit site** – stop dialysis, notify the Vascular Surgeon, PD team and renal team, change dressing as per SGH CLIN 414 Peritoneal Dialysis Catheter (PDC) – Post insertion Catheter Care, Dressing and Management, rest PDC for 2 – 3 weeks with weekly small flushes as per SGH WPI 137 Peritoneal Dialysis Catheter (PDC) – Simple/Small Flush on Peritoneal Dialysis
    c. **For bleeding PDC exit site** – stop dialysis, change dressing as per SGH CLIN 414 Peritoneal Dialysis Catheter (PDC) – Post insertion Catheter Care, Dressing and Management, notify the Vascular Surgeon, PD team and renal team to decide duration of PDC rest
    d. **For presence of fibrin** – notify the PD team and renal team, administer intraperitoneal (IP) heparin as per SGH CLIN380 PD – IP Heparin administration
    e. **For blocked or poor flowing PDC** – stop dialysis, notify the vascular surgeon, PD team and renal team, and manage PDC issue as per SGH CLIN538 Peritoneal dialysis Catheter

(PDC): Poor Flow/No Flow Management and/or SGH CLIN379 Intraperitoneal Actilyse (Alteplase) Administration

14. Adjustment of fill volume and break-in PD regimen will be decided between the vascular surgeon, PD team and renal team based on patient's clinical condition
15. Disconnect patient during break-in PD therapy as per Renal SGH WPI 218 APD Disconnection with Opticap Procedure
16. Upon completion of break-in PD therapy, disconnect patient from dialysis machine as per Renal SGH WPI 216 Automated Peritoneal Dialysis (APD) Connection And Disconnection Procedure – Claria Dialysis Machine
17. After disconnection, heparin lock new PDC to maintain patency as per SGH CLIN364 Peritoneal Dialysis Catheter (PDC) – Heparin Lock
18. On discharge, PD nurses will review patient to schedule ongoing outpatient follow-up and PD training

3. Network file	Renal, Peritoneal Dialysis
4. External references / further reading	Alkatheeri, A. M. A., Blake, P. G., Gray, D., & Jain, A. K. (2016). Success of Urgent-Start Peritoneal Dialysis in a Large Canadian Renal Program. *Peritoneal Dialysis International, 36*(2), 171-176. doi: 10.3747/pdi.2014.00148 Arramreddy, R., Zheng, S., Saxena, A. B., Liebman, S. E., & Wong, L. (2014). Urgent-Start Peritoneal Dialysis: A Chance for a New Beginning. *Am J Kidney Dis, 63*(3), 390-395. doi: 10.1053/j.ajkd.2013.09.018 Bittencourt Dias, D., Mendes, M. L., Alves, C. A., Caramori, J. T., & Ponce, D. (2020). Peritoneal Dialysis as an Urgent-Start Option for Incident Patients on Chronic Renal Replacement Therapy: World Experience and Review of Literature. *Blood Purif*, 1-6. doi:10.1159/000506505 Blake, P. G., & Jain, A. K. (2018). Urgent Start Peritoneal Dialysis: Defining What It Is and Why It Matters. *Clin J Am Soc Nephrol, 13*(8), 1278-1279. doi:10.2215/CJN.02820318 Cullis, B., Abdelraheem, M., Abrahams, G., Balbi, A., Cruz, D. N., Frishberg, Y., . . . Finkelstein, F. O. (2014). Peritoneal Dialysis for Acute Kidney Injury. *Peritoneal Dialysis International, 34*(5), 494-517. doi: 10.3747/pdi.2013.00222 Ghaffari, A. (2012). Urgent-start peritoneal dialysis: a quality improvement report. *Am J Kidney Dis, 59*(3), 400-408. doi: 10.1053/j.ajkd.2011.08.034 Groenhoff, C., Delgado, E., McClernon, M., Davis, A., Malone, L., Majirsky, J., & Guest, S. (2014). Urgent-start peritoneal dialysis: nursing aspects. *Nephrology nursing journal : journal of the American Nephrology Nurses' Association, 41*(4), 347-352; quiz 353. Jo, Y.-I., Shin, S. K., Lee, J.-H., Song, J.-O., & Park, J.-H. (2007). Immediate Initiation of CAPD Following Percutaneous Catheter Placement Without Break-In Procedure. *Peritoneal Dialysis International, 27*(2), 179-183. Kim, K., Son, Y. K., Lee, S. M., Kim, S. E., & An, W. S. (2018). Early technical complications and long-term survival of urgent peritoneal dialysis according to break-in periods. *PLoS One, 13*(10), e0206426. doi:10.1371/journal.pone.0206426 Liu, S., Zhuang, X., Zhang, M., Wu, Y., Liu, M., Guan, S., . . . Cui, W. (2018).

	Application of automated peritoneal dialysis in urgent-start peritoneal dialysis patients during the break-in period. *Int Urol Nephrol, 50*(3), 541-549. doi:10.1007/s11255-018-1785-1 Szeto, C.-C., Li, P. K.-T., Johnson, D. W., Bernardini, J., Dong, J., Figueiredo, A. E., . . . Brown, E. A. (2017). ISPD Catheter-Related Infection Recommendations: 2017 Update. *Peritoneal Dialysis International, 37*(2), 141-154. doi: 10.3747/pdi.2016.00120 Zang, X. J., Yang, B., Du, X., & Mei, C. L. (2019). Urgent-start peritoneal dialysis and patient outcomes: a systematic review and meta-analysis. *Eur Rev Med Pharmacol Sci, 23*(5), 2158-2166. doi:10.26355/eurrev_201903_17261
5. Specialty / Department committee approval	Peritoneal Dialysis Committee Franziska Pettit, Staff Specialist Date: 01.06.20
6. Department head approval	George Mangos, Department Head Renal Services Date: 29.06.20
7. Executive sponsor approval – Nurse Manager	Christine Day, Nurse Manager Medicine Date: 02.07.20

Revision and Approval History

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