Appendix A
40.10.03a Instillation of Medication into Peritoneal Dialysis Solution

INTRA-PERITONEAL*	**Lidocaine without epinephrine**	**Metoclopramide**	**Sodium Bicarbonate**
Indication	Abdominal cramps or pain only after investigations support that the pain is related to the dialysate solution. Avoid risk of masking pain related to other causes (e.g infection). Not indicated if the source of pain is unknown.	Control of nausea or diabetic gastroparesis if the oral route is not tolerated or not beneficial.	Abdominal pain or cramps felt to be related to pH of dialysate.
Dose**	**2.5 mL/L (50 mg per 2L exchange)**	**5 mg/L (10 mg per 2 L exchange)**	**2 – 5 mL/L (4 – 10 mmol per 2L exchange)**
Availability	Injectible lidocaine 1% (10 mg/mL): 2 ml, 5 ml, 10 ml, 20 ml vials.	Injectable metoclopramide (5 mg/mL): 2 ml, 10 ml vials.	Injectable sodium bicarbonate 8.4% (1 mmol/mL): 50 ml vial. Discard vial 24 hours after initial puncture
Compatibility	Use only with standard solution (Dianeal). *Dose and compatibility based on practice. Use immediately after preparation.*	Use only with standard solution (Dianeal). *Dose and compatibility based on practice. Use immediately after preparation.*	Compatible with Dianeal 1.5%, 2.5%, 4.25% (based on compatibility studies) Stable for 24 hours at room temperature or 5 hours at body temperature (32-38 ^{o}C) Current site practice: compatible in 0.5% Dianeal (not verified by compatibility study)
Caution	Systemic absorption is unlikely but may occur. Monitor for CNS (disorientation, confusion, psychosis, tremors, convulsions, respiratory arrest) and Cardiovascular (myocardial depression, hypotension) adverse effects. Epinephrine can cause abdominal vasoconstriction, which may decrease the effectiveness of the dialysis so lidocaine mixed with epinephrine is not indicated.	Clinically significant systemic absorption has been reported with long term use (> 6 months). Monitor for extra-pyramidal symptoms (e.g. tremor, bradykinesia, dyskinesia).	Addition of sodium bicarbonate to the dialysate increases the sodium concentration and may increase risk of developing sodium overload with hypertension.

*Physician's order is required prior to administration of intra-peritoneal drugs
** Inject into dialysis solution before infusing
References attached.

Appendix A
40.10.03a Instillation of Medication into Peritoneal Dialysis Solution

INTRA-PERITONEAL*	**Heparin**	**Deferoxamine Mesylate** (Desferal, Desferrioxamine)	**Insulin**
Indication	Presence of fibrin in dialysate bags, for slow drainage and for hemoperitoneum Confirmation of catheter patency	Iron and Aluminum Chelating Agent Chronic iron overload due to transfusion-dependent anemias (e.g. thalassemia, sickle cell anemia, myelodysplastic syndrome) Chronic aluminum overload in patients with End-Stage Renal Failure (ESRF) undergoing maintenance dialysis	**NOT RECOMMENDED** Most Canadian PD units use subcutaneous insulin and not IP insulin.[2] **Disadvantages:** ▪ More difficult to adjust when timing of meals or CAPD schedules altered ▪ Increased risk of peritonitis[3,4] ▪ Higher total insulin dose[3,5] ▪ High variability in peritoneal insulin absorption that is not related to membrane transport status.[6] ▪ Lower HDL and higher triglyceride levels[5] **NOTE:** Dextrose-containing dialysate can significantly raise the blood sugar. All patients who are starting PD should have their blood sugars monitored during the initiation phase with antihyperglycemic therapies adjusted appropriately. Note that when switching from PD to HD, a patient may require a significant decrease in antihyperglycemic therapy at time of switch.
Dose**	**500-1000 units/L** - **To each bag until effluent clears**	**500 – 1000 mg IP** once daily† OR 2000 mg IP every 2-3 days† Given in night bag Allow to dwell for minimum of 6 hours *Alternate dose for Aluminium toxicity:* 5 mg/kg/dose given IP once per week in final daily exchange OR 2000 mg IP three times weekly in overnight exchange†	
Availability	1000 units/ml (10 ml vials)	Injectable 500 mg and 2 g vials. Reconstituted with Sterile Water For Injection to final concentration of 210 mg/mL.[refer to package insert or product monograph for reconstitution instructions.]	
Compatibility	Dextrose (Dianeal) – compatible (in vitro) Icodextrin (Extraneal) – compatible (in vitro) Nutrineal PD4 in Viaflex - compatible (in vitro)	Compatible with 1.5% and 4.25% dextrose PD fluids (Dianeal) *(Based on compatibility studies using dose of 700 mg/2 L bag (350 mg/L), compatibility of 1000 mg dose based on local practice)*	

Appendix A
40.10.03a Instillation of Medication into Peritoneal Dialysis Solution

Stability		Protect from light *Use immediately after preparation*	
Caution/ Safety Notes	Limited animal and ex vivo studies suggest that heparin may have dose-dependent adverse effect on peritoneal mesothelial cells. The use of the smallest effective dose is therefore recommended. Doses of 500 to 1000 units per liter of peritoneal dialysate do not appear to cause peritoneal toxicity. Although intraperitoneal instillation of heparin does not affect systemic coagulation parameters or increase bleeding risk, heparin may still reach the systemic circulation. This is believed to occur by lymphatic absorption or with peritonitis due to increased peritoneal membrane permeability. IP heparin is therefore contraindicated in patients with heparin-induced thrombocytopenia (HIT).	Visual and auditory toxicity have been reported with chronic administration. Auditory and ophthalmic testing, including slit-lamp examination and dilated-fundus exam, should be performed at baseline and repeated yearly. -May increase risk of infection and peritonitis due to rise in dialysate iron concentrations. -May increase risk of infection with mucormycosis (zygomycosis), Yersinia, and Vibrio vulnificus. -Long term effect of deferoxamine on peritoneal membrane function unknown. -Deferoxamine may also be administered I.M., by slow I.V., or S.C. infusion. The mode of administration should be individually determined and the dosage adapted during the course of therapy.	

*Physician's order is required prior to administration of intra-peritoneal drugs
** Inject into dialysis solution before infusing
† Dosing information obtained from Case Reports
References attached

Appendix A
40.10.03a Instillation of Medication into Peritoneal Dialysis Solution

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