



## MANITOBA RENAL PROGRAM

<b>SUBJECT</b> <ul style="list-style-type: none"> <li>▪ Administration of Intradialytic Parenteral Nutrition to the Hemodialysis Patient</li> </ul>	<b>SECTION</b> 30.10 Hemodialysis Equipment and Procedures
	<b>CODE</b> 30.10.16
<b>AUTHORIZATION</b> <ul style="list-style-type: none"> <li>▪ Professional Advisory Committee, Manitoba Renal Program (pending)</li> <li>▪ Nursing Practice Council, St. Boniface Hospital (pending)</li> </ul>	<b>EFFECTIVE DATE</b> September, 1997
	<b>REVISION DATE</b> April 2013 June 2016 June 2017

**PURPOSE:**

1. To supplement oral intake to optimize nutritional therapy for hemodialysis patients.

**POLICY:**

1. Intradialytic Parenteral Nutrition (IDPN) can only be initiated after consulting with the renal dietitian and/or other disciplines in accordance with site specific policies.
2. Nurses must verify and check the Prescribed Order with the Prescription Label on the IDPN Bag in accordance with site specific policy.
3. Registered Nurses and Licensed Practical Nurses may administer IDPN in the dialysis unit.
4. Bloodwork should be collected in accordance with site specific policy and Physician orders.

**METHOD A:**

**For Dextrose and/or Amino Acid Solution with a separate Lipid bag:**

**EQUIPMENT:**

- Dextrose and Amino Acid Solution (as ordered)
- Lipid solution (as ordered)
- Baxter CLEARLINK System Non-DEHP Solution Set with DUO-VENT Spike 0.22 micron filter (2H8480)
- Baxter CLEARLINK System Non-DEHP solution set (2H8401)
- Y-line connector (Gambro S-660-C)
- 2 syringes containing 10 ml of 0.9% NaCl

See 30.10.16a Appendix A

**PROCEDURE:**

**KEY POINT:**

**Prior to Initiating Hemodialysis:**

## **PROCEDURE:**

1. Perform Hand Hygiene.
2. Gather supplies.
3. Verify and check the Prescribed Order with the Prescription label on the Solution bags.
4. Inspect bags for cracking and separation (expiry date).
5. Prior to priming the Dextrose/Amino Acid Solution tubing mix the Dextrose and Amino Acids by rolling the solution bag down from the top until seal separating the 2 solutions breaks and solutions fully mix.
6. Prime the filtered tubing (2H8480) with Dextrose/Amino Acid Solution.
7. Prime the non-filtered tubing (2H8401) with Lipids Solution.
8. Load each tubing into separate channel of infusion pump and set rate as ordered.
  
9. Cleanse lowest port of Dextrose/Amino Acid infusion line and aseptically attach lipids infusion line.

## **KEY POINT:**

- In accordance with site specific policy; typically 2 nurse check.
- Discard any solution where precipitates, particulate matter, cloudiness, discoloration and/or other unusual appearance are observed.
  
- The Dextrose/Amino Acid solution must be filtered to help prevent both bacterial and particulate contamination.
- Filter not required for Lipids. If filter used must be 1.2 microns or larger to prevent clogging of filter.
- Solution to be infused at prescribed rate. NOTE: Not to exceed 350 ml/hr (16.6 grams/litre glucose).
- Do not increase rate to accommodate shortened treatment time.
- If Dextrose/Amino Acid solution is stopped abruptly eg. unexpected early termination of treatment, a 10% dextrose solution may need to be established at same rate as the dextrose/amino acid solution to prevent rebound hypoglycemia; contact physician for direction.

## **When ready to initiate Hemodialysis:**

10. Access patient's CVC or AVF/AVG.
  - Per MRP Policy and Procedures:
    - 30.30.01 *Venipuncture of Arteriovenous Fistula/Graft*
    - 30.30.02 *Accessing and Locking Dialysis Central Venous Catheter (Anticoagulant/Thrombolytic/Antibiotic Locking)*
11. Draw bloodwork as required.
  - See 30.10.16a *Appendix A*.
12. Attached primed Y-line connector (Gambro S-660-C) to venous needle or to port of CVC to be used for return of blood.
  - The TPN lines cannot be attached directly to medication ports on the dialysis blood lines as the blood lines are not DEHP-free. "Lipid containing solutions are known to leach DEHP from bags and tubing made of PVC; therefore they must be administered through DEHP-free administration sets"
  - To prime Y-line connector attach syringe containing 0.9% NaCl to each end of Y and displace air with NaCl. (Alternatively with AVF can attach Y-line connector to venous needle)

## **PROCEDURE:**

13. Attach venous blood line to blue end of primed Y-line connector.
14. Attach end of TPN tubing to red end of primed Y-line connector.
15. Attach arterial blood line to arterial needle or to port of CVC to be used for supply of blood.
16. Start hemodialysis treatment per procedure 30.70.07.

## **KEY POINT:**

and backfill with blood to displace air).

- See 30.10.16a *Appendix A*.
- Ensure that volume of TPN to be infused is included in the fluid removal calculations and UF Goal.

## **METHOD B:**

**For Dextrose and/or Amino Acid Solution with Lipid: total nutrient admixture (TNA 3 in 1):**

## **EQUIPMENT:**

- TPN solution TNA 3 in 1 as ordered.
- Baxter CLEARLINK System non-DEHP Solution Set 108" 1.2 micron Downstream Filter (2H8486)
- Y-line connector (Gambro S-660-C)
- 2 syringes containing 10 ml of 0.9% NaCl

## **PROCEDURE:**

### **Prior to Initiating Hemodialysis:**

1. Perform Hand Hygiene.
2. Gather supplies.
3. Verify and check the prescribed order with the prescription label on the solution bags.
4. Inspect bag for cracking and separation (expiry date)
5. Prime the Non-DEHP 1.2 micron filtered tubing with TNA 3 in 1 solution.
6. Load the tubing into infusion pump and set rate as ordered.

## **KEY POINT:**

- In accordance with site specific policy; typically 2 nurse check.
- Discard any solution where precipitates, particulate matter, cloudiness, discoloration and/or other unusual appearance are observed.
- The Dextrose/Amino Acid solution must be filtered to help prevent both bacterial and particulate contamination.
- Lipid containing solutions are known to leach DEHP from bags and tubing made of PVC; therefore they must be administered through DEHP-free administration sets.
- Lipids must be infused using a filter of 1.2 microns or larger to prevent clogging of filter.
- Solution to be infused at prescribed rate. **NOTE:** Not to exceed 350 ml/hr (16.6 grams/litre glucose).
- Do not increase rate to accommodate shortened

## **PROCEDURE:**

### **When ready to initiate Hemodialysis:**

7. Access patient's CVC or AVF/AVG.
8. Draw bloodwork as required.
9. Attached primed Y-line connector (Gambro S-660-C) to venous needle or to port of CVC to be used for return of blood (see Appendix A – picture).
10. Attach venous blood line to blue end of Y-line connector.
11. Attach end of TPN tubing to red end of Y-line connector.
12. Attach arterial blood line to arterial needle or to port of CVC to be used for supply of blood.
13. Start hemodialysis treatment per procedure 30.10.01 *Use of Fresenius 5008 Delivery System using 0.9% NaCl* or 30.10.03 *Initiation and Termination of Treatment Using the Fresenius 5008 ONLINEplus™ System*.

## **DOCUMENTATION:**

- Hemodialysis Treatment Record
- Integrated Progress Notes
- Renal Patient Kardex
- Medication Administration Record

## **KEY POINT:**

- treatment time.
- If 3 in 1 solution is stopped abruptly i.e. unexpected early termination of treatment, a 10% dextrose solution may need to be established at same rate as the 3 in 1 solution to prevent rebound hypoglycemia; contact physician for direction.
- Per MRP Policy and Procedures:
  - 30.30.01 *Venipuncture of Arteriovenous Fistula/Graft*
  - 30.30.02 *Accessing and Locking Dialysis Central Venous Catheter (Anticoagulant/Thrombolytic/Antibiotic Locking)*
- The TPN lines cannot be attached directly to medication ports on the dialysis blood lines as the blood lines are not DEHP-free. "Lipid containing solutions are known to leach DEHP from bags and tubing made of PVC; therefore they must be administered through DEHP-free administration sets"
- To prime Y-line connector attach syringe containing 0.9% NaCl to each end of Y and displace air with NaCl. (Alternatively with AVF can attach Y-line connector to venous needle and backfill with blood to displace air).
- Ensure that volume of TPN to be infused is included in the fluid removal calculations and UF Goal.

## **REFERENCES:**

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(Note: The webpage this is located on was updated on October 20, 2015. <https://wayback.archive-it.org/7993/20170111182403/http://www.fda.gov/MedicalDevices/Safty/AlertsandNotices/PublicHealthNotifications/ucm062182.htm>

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## **REVIEWED BY:**

SOGH & SBGH Pharmacists and dietitians