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NEPHROLOGY PROGRAM
DEPARTMENT POLICIES AND PROCEDURES

Home Dialysis - Section 09 - Peritoneal Dialysis - HDU 9-07
Protocol for Peritoneal Equilibrium Test (PET)
No.: 01481 (TOH Standardized Policy Number)

ISSUED BY:
Home Dialysis Unit Clinical Practice Committee

DATE OF APPROVAL:
2006/06

APPROVED BY:
Program Clinical Director and Division Head

LAST REVIEW/REVISION DATE:
2018/02

CATEGORY:
Peritoneal Dialysis

IMPLEMENTATION DATE:
2006/06

POLICY STATEMENT:

- Peritoneal equilibrium testing (PET) is a measure of peritoneal membrane performance that all patients on Peritoneal Dialysis (PD) require
- The Peritoneal Equilibrium Test (PET) will be performed:
  - 4 to 6 weeks after the patient has been on Peritoneal Dialysis (PD) as baseline
  - and at the beginning of the patient's fourth year on PD and then yearly
  - repeat PET when clinically indicated after Nephrologist assessment
- Patients will be given specific instructions for the PET test according to their PD regimen (CAPD, CCPD/APD):
  - Overnight dwell time must be 8-12 hours duration
  - Be in the Home Dialysis Unit (HDU) for their first morning exchange the next day
- Patient will use a 2.5% Dianeal (or 2.27% if on Physioneal) dialysate concentration for the bedtime exchange, same volume as per patient's prescription
- If the patient is scheduled for a clinic visit within the next 2 weeks of the PET test, obtain requisitions and draw the clinic blood work when doing the 2-hour blood sampling

INFECTION PREVENTION AND CONTROL:

1. **Hand Hygiene:** as per Corporate administration policy # 00233 (Hand hygiene Products and Materials) and policy # 00014 (Hand Hygiene):

   i. Before initial patient/patient environment contact
   ii. Before an aseptic procedure
   iii. After body fluid exposure
   iv. After patient/patient environment contact

2. Personal Protective Equipment: as per Infection Prevention and Control Policy # 00023 (Routine Practices)

DEFINITION(S): NA

ALERTS:

- For patients with diabetes, check glucose with glucose meter prior to starting test. If glucose is over 15 mmol/L, call MD for advice as to whether the PET should be rescheduled
- PET should be done at least one-month post peritonitis resolution when the patient is clinically stable
- It is important to take samples at the indicated time for accuracy of the results

EQUIPMENT:

Quantity	Product	Order #
1	Bag of Dianeal 4.25 % or Physioneal 3.86 % twin bag 2 liter or 2.5 liter as per pt.'s prescription	
1	Bag of PD solution as per pt.'s prescription for use when PET is completed	
5	Alcohol swabs	
1	21g blood collection needle or a safety winged blood collection set	
5	Holders for Vacutainer	009450
5	Needle Vacutainer, blood collector, 21G x1.25	155445
4	Tube Vacutainer Red 6ML	009685
1	Tube Vacutainer Green Lithium, 4.5 ML	009665
3	Mini-caps	320810
1	Effluent sample bag	320750
1	Clean towel	
1	Tourniquet	
1	Pair of non- sterile gloves and 1 face protection for PPE	
1	Scale (fish scale) or small electronic scale	
1	PET worksheet	
1	Requisition: "Biochemistry-Hematopathology" and label (check off random glucose, sodium, urea, creatinine and albumin)	LAB 02 /413670
5	Requisition- Biological Materials and labels (indicate on left portion of req, peritoneal and check off sodium, then write in 'other tests' section: FL PET 1 overnight, FL PET 1- 0 hr dwell, FL PET 1- 1 hr dwell, FL PET 1- 2 hr dwell and FL PET 1- 4 hr dwell note: FL PET 1 includes Gluc, urea, Cr	LAB 70/450110

PROCEDURE:

3. Explain the procedure to patient
4. Perform hand hygiene and don PPE
5. If patient is diabetic, check patient's glucose level and act as per Alert (above)
6. Connect Twin Bag (4.25 or 3.86 %) and drain the overnight dwell as per CAPD procedure. Patient should be in a sitting position to facilitate drainage
7. Fill out PET worksheet: concentration used, volume drained, dwell time in minutes of the overnight exchange
8. To obtain effluent samples:
    - Attach 21 g Blood collection needle set to vacutainer holder
    - Clean sample port of the Twin Bag drain bag with alcohol swab
    - Insert needle into sample port of Twin Bag drain bag
    - Insert Red Tube Vacutainer and fill the tube
    - Remove the needle from the drain bag and activate the safety latch
9. **Obtain 'Overnight' effluent sample** as per step #5. Apply the label plaqued 'overnight'. Record date and mark 07:00 am as time on the requisition
10. Place patient in a supine position
11. Infuse Dianeal 4.25 % or Physioneal 3.86 % (prescribed solution and volume) as per CAPD procedure
12. During infusion, patient should turn from side to side, about every 200 ml, to ensure that total surface area of membrane comes in contact with dialysate
13. Fill out PET worksheet: length of infusion time, concentration of dialysate used (4.25 or 3.86 %) and volume of dialysate infused
14. Collect '0 hr' dwell sample:
    - Immediately after infusion is complete, lower infusion bag to drain position
    - Drain 200ml of effluent
    - Close twist clamp
    - Gently invert bag 2-3 times to mix effluent
    - Follow step #5 to collect sample in a red stopper tube
    - Apply appropriate label to sample tube
    - Re-infuse the remainder of the effluent in the abdomen. This is to ensure the full volume is used for accuracy of the test
    - Close twist clamp. Place blue clamp on fill line, disconnect tubing and apply mini-cap on extension set
    - Using the 0 hr dwell time requisition, write date / time on label and attach requisition to sample
15. At '1 hr' (60min) dwell time:
    - Obtain effluent sample
    - Remove mini-cap and attach effluent sample bag to extension set of catheter. Open twist clamp and drain approximately 200ml
    - Close twist clamp
    - Collect effluent sample as per step #5
    - Apply appropriate label to sample tube

- Open twist clamp
- Re-infuse effluent from effluent sample bag
- Close twist clamp and white clamp on effluent sample bag
- Disconnect and apply mini-cap to extension set
- Using the 1 hr dwell time requisition, write date / time on label and attach requisition to the sample

16. At '2hr' (120min) dwell time:

a. Obtain effluent sample as per step 12:

- Using the 2 hr dwell time requisition, write date / time on label and attach requisition to the sample

b. Draw blood sample:

- Using a Blood collection needle and vacutainer holder or a safety winged blood collection set with vacutainer holder, draw sample for: creatinine, urea, glucose and albumin (green stopper tube). **NOTE**: Blood sample must be drawn within 10 minutes of the 2 hr mark of the test
- Apply appropriate label for 2 hr dwell blood sample. Record date and time of sample on label and requisition

17. At 4 hrs (240 min) dwell time:

- Have pt in sitting position if possible
- Connect Twin bag tubing to the PD catheter extension set. Use dialysis solution as per patient prescription
- Drain abdominal cavity until drainage is complete, maximum 30 minutes
- Collect effluent sample from drain bag using a 7ml red stopper tube, per step #5
- Apply appropriate label to the sample tube
- Apply appropriate label for 4 hr dwell blood sample. Record date and time of sample on label and requisition
- Finish the exchange as per procedure
- Record: drainage time and actual volume of drained dialysate on PET worksheet
- Enter Data in NephroCare using the phrase templates

18. Place the completed PET worksheet in the case managers' box for data entry into Adequest program

19. If the PET is done outside of the HDU, fax results to the HDU: fax 613-738-8334. Data will be entered by HDU RN or delegate

DOCUMENTATION:

1. HDU PET worksheet

2. NephroCare Progress Notes using phrase template 'PET part 1' and 'PET part 2' and 'PD Adequacy and PET results'

3. Baxter Adequest Data base

4. Addendum: PET worksheet

RELATED POLICIES / LEGISLATION: N/A

REFERENCES:

1. CSN Clinical Practice Guidelines and Recommendations on Peritoneal Dialysis Adequacy 2011 http://www.pdiconnect.com/content/31/2/218.full.pdf+html
2. Comparison of a 2.5% and a 4.25% Dextrose Peritoneal Dialysis Equilibration test http://www.pdiconnect.com/content/22/3/365.full.pdf
3. Baxter PD Adequest program
4. Molsahn,E., Butera,E. (2006) Contemporary Nephrology Nursing. Anthony J Janetti. Inc., New Jersey. Pgs 638-642

COMMENTS / SIGNIFICANT REVISIONS: N/A