PROTOCOL

TITLE: CONTINUOUS AMBULATORY PERITONEAL DIALYSIS – CAPD

PURPOSE: To outline the nursing management of patients receiving peritoneal dialysis.

LEVEL: Dependent _____ Independent _____ Interdependent _X_

SUPPORTIVE DATA:

- All patients using an automatic Peritoneal Device at home will be converted to a manual system while an inpatient.
- Peritoneal Dialysis is used for removal of fluid and toxins, the regulation of electrolytes and management of azotemia.
- During Peritoneal Dialysis a hypertonic solution is infused into the peritoneal cavity. The solution is left for a specified period of time and then drained. The peritoneal membrane is semi permeable and acts as a filter to remove excess water, electrolytes and toxins from the blood.
- Peritoneal Dialysis (PD) dialysate should be warmed; however a microwave oven should not be used due to the possibility of overheating.
- The patient is given a copy of CAPD discharge instructions by the nephrologist at discharge.
- Fluid volume changes are associated with dialysis and increase the patient's risk for hemodynamic changes. Assessment and monitoring of changes is required.
- Solutions available are 1.5%, 2.5% and 4.25%
- Hypertonic dialysate (4.25%) tends to pull off more fluid per exchange.
- All physician orders must contain type of solution, dwell time, and number of exchanges to be completed in a 24 hour period. Orders for additives to the solution must also be written and sent to pharmacy.

DEFINITIONS:

1. **Diffusion**- is passive movement of solutes through a semi-permeable membrane from an area of higher concentration to one of lower concentration. For peritoneal dialysis, this is when the patient's blood contains waste products which give it a higher osmolarity than the dialysate. Waste in the blood diffuses across the semi-permeable membrane into the dialysate solution.
2. **Osmosis**- passive movement of solvent through a semi permeable membrane from an area of lower concentration to one of higher. Dextrose in the dialysate is higher osmotic gradient than that of the patient's blood. Excess water in the blood is pulled into the dialysate via osmosis.
3. **Instillation phase**- the dialysate infuses via gravity into the patient's peritoneal cavity through the catheter.
4. **Dwell phase**- the dialysate remains in the patient's peritoneal cavity, allowing osmosis and diffusion to occur.
5. **Drain phase**- the dialysate and excess extracellular fluid, wastes and electrolytes are drained via gravity from the peritoneal cavity via the catheter.

CONTENT: A) Assessment B) Monitoring and Nursing Care C) Infection Control D) Reportable Conditions E) Documentation

A. ASSESSMENT:

1. Weigh the patient daily in the morning before the procedure and after the last exchange.
2. Obtain and record vital signs, including temperature.
3. Assess respiratory rate and lung sounds.
4. Inspect catheter site for signs of infection at the beginning of each exchange.
5. During the drain phase observe characteristics of the outflow. Solution should be clear to pale yellow.

B. MONITORING and NURSING CARE:

1. Monitor fluids and electrolytes.
2. Monitor I & O for each exchange and overall for total volume status.
3. Provide frequent oral care.
4. Monitor patient's tolerance of restrictions if patient on a restricted fluid and dietary intake.
5. Follow procedure in 8620.186a for dressing care.

C. INFECTION CONTROL

1. To decrease the risk of introducing pathogenic organisms into the peritoneum any medication that is added to dialysate will be done by the Pharmacy.
2. If a culture specimen of the drainage is required, use povidone iodine on a sterile 4x4 and scrub medication port. With safety needle/syringe remove amount needed for specimen.

D. REPORTABLE CONCERNS:

1. Report the following to the Nephrologist:
    a. Presence of signs /symptoms of CHF, fluid overload, hyponatremia, respiratory insufficiency.
    b. Increased sodium levels if 4.25% is used due to water removal.
    c. Excess volume depletion which results in hypotension.
    d. Presence of signs/symptoms of infection, abdominal pain and/or abdominal rigidity/tenderness.
    e. First appearance of abnormal drainage color (cloudy, brownish, amber or bloody).

E. DOCUMENTATION

1. Document the patient's tolerance of the procedure such as pain, discomfort or signs of complications and condition of exit site.
2. Document if cultures were obtained and sent to lab.
3. Document vital signs and weight associated with dialysis procedure.

4. Complete the PD flowsheet noting:
    a. Solution type, volume
    b. Time to infuse
    c. Dwell time
    d. Drain time
    e. Assessment of drainage
    f. Amount of fluid returned and ending fluid balance
    g. Patient education regarding sterile technique, physician orders for treatment plan, reinforcement of understanding of previous information regarding PD.

5. All general assessments regarding respiratory, circulatory and fluid status.

6. Any communication with physician regarding reportable concerns.

7. If solution is profiled on the eMar, scan and document per hospital protocol.

8. Include in Interdisciplinary Plan of Care.

References:

Lynn-McHale Wiegand D. AACN Procedure Manual for Critical Care. 6thth Edition. 2011. WB Saunders . Procedure 114, page 1048-1056.

Perry A. and Potter P. Clinical Nursing Skills and Techniques. 6th Edition. 2004, Elsevier Mosby. Pages 1106-1113

SGAH Care Policy Manual, Peritoneal Dialysis, Policy No. 25277

WAH Department of Nursing, Peritoneal Dialysis Nursing Protocol 3062