PROCEDURE

ORIGINAL DATE: 08/99
Revised Date: 11/09

Home Health Foundation, Inc.

SUBJECT: TOTAL PARENTERAL NUTRITION (TPN) INFUSION, MANAGEMENT OF

PURPOSE: To safely and effectively administer Total Parental Nutrition (TPN) in the home care/ Hospice House setting. The therapy is indicated when oral or enteral alimentation is contraindicated or inadequate to meet nutritional needs.

Equipment:

- TPN solution bag (warmed to room temperature)
- Additives
- Infusion pump
- Pump administration tubing with in-line filter
- Appropriate needleless connectors
- Syringes and needles for additives
- Alcohol prep pads
- Heparin and Normal Saline syringes for injection for pre and post flushes

Policy

1. Patients will be initiated to TPN in the hospital and must be stabilized on a cycle regime 24 hours prior to admittance. First dosing of TPN in the home is not allowed. Exceptions to 24 hours stable cycle before discharge may include: severe or chronic malnutrition, cachexia, excessive non-urinary fluid losses (1 liter/day), organ failure, diabetes, pediatric patients, alcoholism. These cases will be reviewed and approved by physician, IV company and IV program manager or VNA, MVH administrator prior to acceptance for home care or hospice services.
2. The patient must become independent or have a significant other who assumes responsibility for the TPN administration.
3. The clinician will teach the patient and/or significant other about the TPN infusion, including additives, set up and troubleshooting the pump, s/s of hypo/hyperglycemia and refeeding syndrome.
4. TPN solutions must be administered via a surgically implanted tunneled central venous catheter, PICC line or POC. Placement must be verified by x-ray to be in superior vena cava. If the catheter has more than one lumen, the same lumen should be used consistently for the TPN. **TPN shall not be administered via midline or peripheral catheters.**
5. A specific order for TPN must be written by the physician and must include cycle regime and tapering rates. The physician and IV vendor will be responsible for coordination of the patient's plan of care. The information should be forwarded to the IV Program Manager and the primary nurse as soon as possible.
6. All TPN solutions must be administered by an infusion pump.
7. Strict aseptic technique will be adhered to for all TPN procedures.

8. Solution tubing will be changed every 24 hours.

9. TPN will be filtered. A .22 micron filter is used for dextrose/amino acid solutions. Tri-mixed lipid solutions will be filtered using a 1.2-1.5 micron filter.
10. TPN solution must be stored in the refrigerator and removed two hours prior to administration.
11. The clinician will monitor lab values per physician order and adjust TPN pump settings and additives to the TPN solution as ordered. The patient's temperature is recorded at every visit and weight is recorded weekly if able.
12. Patient/family will be taught to observe for and report complications which may include:
    a. Metabolic
        1.) Infection/sepsis
        2.) Hyperglycemia/Hypoglycemia
        3.) Circulatory volume excess/deficit
        4.) Electrolyte, mineral and vitamin imbalance
        5.) Allergic reactions
    b. Mechanical
        1.) Catheter occlusion
        2.) Catheter displacement/infiltration
        3.) Central vein thrombosis/occlusion
        4.) Air embolism
        5.) Catheter embolism
        6.) Infusion pump malfunction/failure
13. Efforts to prevent mechanical complications will be practiced by clinicians and taught to patients/family, including:
    a. Keep scissors and serrated clamps away from catheter site
    b. Open clamp before flushing
    c. Close (clamping) catheter before opening the system except for the Groshong

Procedure

1. Use two patient identifiers.
2. Remove TPN from refrigerator two hours prior to administering and assemble all equipment.
3. Check TPN solution, for patient's name, expiration date and correct formula. Be sure solution and additives match the physician order.
4. Wash hands and don gloves.
5. Inspect bags for any leaks or particulate matter. If using a TPN formulation with lipids, inspect the solution for brown oily streaks. If any of the above occur-discard solution and notify IV company.
6. Prepare syringes with additives following aseptic technique.
7. Swab the rubber port of TPN bag with alcohol and allow to dry.
8. Inject additives through port and gently agitate bag. **Note: Some TPN orders do not require the addition of additives.**
9. Close clamps on pump administration tubing. Remove sterile spike on tubing and insert into sterile port of TPN bag.
10. Place new battery in pump with each bag change.
11. Insert tubing into pump. Use prime button to prime tubing.
12. Wipe central line needleless connector with alcohol; insure line patency by drawing back on syringe and checking for a blood return. Do not administer TPN in a catheter with no blood return, unless patency has been documented by a flow study.

13. Flush line with 5-10cc Normal Saline.
14. Wipe connector again with alcohol.
15. Connect TPN to needleless connector.
16. Pump comes programmed from pharmacy. Check parameter and reset volume with each bag change.
17. Unclamp catheter, open all clamps on IV tubing and turn pump on.
18. Document.

Stopping the TPN infusion:

1. Wash hands.
2. Stop the pump.
3. Disconnect TPN from central line.
4. Wipe needleless connector cap with alcohol and flush with 5-10cc Normal Saline.
5. Repeat wipe and flush with 5cc Heparin per physician orders.
6. Clamp central line.

Approved Policy Committee: 11/10/09