

Total Parenteral Nutrition (Hyperalimentation)

Ref: (a) Maki, DG, Brodicelli, JT, Prospective Study of Replacing Administration Sets for Intravenous

Therapy at 48 vs. 72 Hour Intervals, JAMA, October 2, 1987, Vol 258, No 13.

(b) Maki, DG, Ringer, M. Evaluation of Dressing Regimens for Prevention of Infection with Peripheral Intervenous Catheters, JAMA, November 6, 1987, Vol 258, No 17.

Insertion of a hyperalimentation catheter is a surgical procedure which is to be performed with strict attention to aseptic technique. Because TPN solution is a good medium for bacterial growth and central venous line gives systemic access, contamination and sepsis are always a risk.

- Hands are to be washed thoroughly with an antiseptic soap prior to insertion.
- Physician inserting catheter must wear gown, sterile gloves and mask. Strict surgical asepsis is required.

Other personnel in attendance should wear a mask, including the patient, when possible.

The insertion site must be scrubbed in a circular motion with an antiseptic solution (an iodophor solution is preferred) but chlorhexidine (Hibiclens) or 70% alcohol are acceptable (See Nursing Procedure Manual). Cutaneous antisepsis at the time of catheter insertion is very important in prevention of catheter related infection.

Sterile drapes are then applied.

- The cannula is to be secured to stabilize it at the insertion site. All connection sites are secured with ½ inch waterproof tape to prevent accidental disengagement of IV tubing. A sterile occlusive dressing is then applied sealing the area from the environment.
- The date, time, and type of catheter and insertion site are to be recorded in the chart. The dressing should be marked with date, time, and your initials.
- Solution is not left hanging for more than 24 hours. Patients should be evaluated at least every 8 hours for evidence of cannula-related complications. This evaluation should include gentle palpation of the insertion site through the intact dressing. If the patient has an unexplained fever or there is pain or tenderness at the insertion site, the dressing should be removed and the site inspected. Signs of infection to observe for are: redness, inflammation or purulent drainage from insertion site. Condition of the site must be documented on nurses notes at least every 12 hours or at least once a shift.

Hyperalimentation lines should not be used for any other purpose. The following are contra-indicated when using a central venous lumen for TPN: infusion of blood or blood products, Bolus injection of drugs, simultaneous administration of IV solutions, measurement of CVP, aspiration of blood for routine lab tests or addition of medication to TPN.

- Dressing changes are ideally the responsibility of the physician who places the catheter, or a designated member of the medical or surgical team preferably, the same

person in all instances; a Registered Nurse knowledgeable with the procedure may change the dressing.

- Hands are washed with an anti-microbial soap prior to the dressing change.
- All persons involved with dressing change are to wear a face mask. Patients, also, should wear a mask if there would be no respiratory compromise.
- Dressings are changed every 48 hours (M-W-F) and sooner if necessary. If dressings become wet, they should be changed immediately.
- The old dressing is removed wearing a pair of clean gloves. Observe the insertion site and surrounding skin for any inflammation, erythema, drainage, leakage or crusting and see that sutures are in place. Wearing sterile gloves, scrub the area with povidine iodine solution.
- Cover the insertion site with a dry sterile dressing. The dressing is marked with the date and time of procedure and the initials of the persons' changing it. The condition of the site is to be recorded in the patient's chart.
- See Nursing Procedure Manual for tubing change procedure. Administrative sets are changed every 24 hours.
- Between changes of components, the IV system should be maintained as a closed system as much as possible. TPN is usually administered via a triple lumen catheter or a pulmonary arterial catheter infusion port. There should not be any entries to the TPN line except for lipid infusions.