Nutrition Services at a glance

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Learning Objectives

• Residents’ awareness of the services offered by Nutrition Services Department
• Residents gain a basic understanding of different diet orders and how to order them
• Residents become familiar with JHS Enteral Nutrition formulary and their use in different conditions
• Residents gain working knowledge on when, and how to order Parenteral Nutrition.
• Role of Registered Dietitian as a team player and their expertise and knowledge in nutritional management of patients
Nutrition Services

• Patient Food and Nutrition Services
  – Three meal trays and snacks per MD order
  – Nutrition Supplements and Tube Feeding formulary
  – Food allergy and Food Drug Interaction monitor – Coumadin
  – Guest trays
  – Ethnic, cultural, religious preferences
  – Floor pantry snacks, nourishment, quick meals, parent meals
Clinical Services

- Registered, Licensed Dietitians
- Consults, Inter-disciplinary rounds
- Assessment, reassessment, calorie count, food-drug interaction education
- Enteral, Parenteral Nutrition Support
- Education to patients, Nurses and other staff and community
- Lecture to Residents on Diets, enteral and parenteral Nutrition
Medical Nutrition Therapy

• Disease prevention and treatment
  • Healthy diets
    – Manage chronic disease with Specialized and Therapeutic diets

• Nutrition Support
  – Tube feeding
  – TPN
Nutrition Care Process

Nutrition Screen in 24 hours

All patients with length of stay over 10 days are assessed by RD and followed up per level of care

Consults in 48 hours

RD

RN
Nutrition Assessment Parameters

- Anthropometric Measurements
  - Height (Ht), Weight (Wt), Body Mass Index (BMI) and Ideal Body Weight (IBW)
- Plasma Proteins
  - Pre-albumin, Albumin
- Medical History and current disease state
- Social and economical history
- Skin breakdown
- Physical Assessment - general appearance of the patient
Diet Orders

• Physician’s are responsible for writing diet orders based on dietitians recommendations.

• Every patient should have a written diet order
  • even if it is NPO (Nothing Per Oral)

• Initial diet order should include all necessary modifications.

• After a Procedure or surgery, Resume diet, Diet as tolerated are not approved orders.
Continue: Diet orders

• When changes need to be made to an existing order, the entire order should be rewritten
  – e.g. if the current diet is 1800 Kcal ADA and the physician wants Sodium restriction, the new diet order should read:
    – 1800Kcal ADA 2Gm Na

• Writing only the change in Na prescribed may result in ambiguity as to the caloric level
Types of Diets

By consistency:
- Regular, Soft, mechanical Soft, Puree, thickened liquids – honey, nectar, pudding

By Nutrients:
- Restricted calories, fats, sodium, protein, potassium, Cholesterol

Other special diets:
- Low Residue, high Fiber, Bland, Gluten free, BRATT, Purine controlled, test diets like VMA, MĀO

Supplements:
- To supplement compromised intakes – to meet nutrition needs – regular supplements like Ensure, specialized supplements like Glucerna Shake, Nepro
Enteral Nutrition

- Is defined as the provision of partial or total liquid nutrition through a tube into the gastrointestinal tract.

- The word “Enteral” means: within or by way of the GI tract.

- Indicated when PO consumption does not meet estimated needs over prolonged periods of time and GI function intact
Enteral Nutrition

• **Delivery**
  - gravity controlled, pump assisted - continuous, intermittent or bolus

• **Mode**
  - Nasoenteric tubes (short term) – orogastric, nasogastric, naso duodenal/jejunal
  - Enterostomy Tubes – surgical gastrostomy tube, PEG, jejunostomy – PGJ or PEJ

• **Formula**
  - Standard formula – Jevity 1.2, Promote 1.0, Two Cal HN
  - Specialized formula – Glucerna 1.2, Nepro Carb Steady, Vital 1.2
Administration Guidelines for Enteral Nutrition

- Verify placement and patency
- Choose appropriate formula
- Begin feedings at a slow rate
- Advance feeding slowly
- Check Residuals every 4 hours
  - Residuals < 200ml only can be done with NG tube and PEG
- Keep HOB > 30 degrees
- Monitor patient’s tolerance
Enteral Formulas

- Enteral formulas are sterile until opened - formulas are an excellent medium for bacterial growth.
- Contaminated feedings pose a significant risk for immuno-compromised patients.
- Contaminated enteral feedings have been identified as a source of infection in hospitalized patients.
- Limit manipulation and formula hang time; change bags and tubing frequently.
Parenteral Nutrition - Patient Selection

• EN is not feasible in pt a with NPO status >5-7 days. Appropriate before 5-7 days only if pt with protein-calorie malnutrition.

• For surgical preparation – only when pt is malnourished (5-7 days pre-op)

• SBS, Crohns, high output intestinal fistulas, GI hemorrhage, complete bowel obstruction

• Severe diarrhea / intractable vomiting

• Severe malnutrition with intolerance to tube feeding

• Needs more than what can be taken in – PO or EN – sufficient calories cannot be ingested or absorbed
Route of PN

- PPN – Peripheral Parenteral Nutrition
- Short term therapy (1-2 weeks)
  - Minimal impact/Supplemental
  - Not useful in volume sensitive patients
- Peripheral, IV access
- Cannot meet needs by itself in many cases
- At risk for infiltration / phlebitis
  - Only 800 – 900 milli osmol /kg
- IV fat emulsion should be used when possible to provide additional calories and avoid EFA deficiency
Route of PN

- CPN - Central Parenteral Nutrition
- Central Catheter – single lumen, multi-lumen (TLC), Port, PICC
- Dedicated port – 2 in 1, 3 in 1
- Continuous, Cyclic
- Meets increased nutrition needs
- Risks: overfeeding causes metabolic abnormalities (increased CO2 production, fatty liver, electrolyte abnormalities, hyperglycemia), refeeding syndrome, Catheter related infection and sepsis, GI complications – cholestasis
- Cost
Initiation of PN

- Total dextrose dose should be no more than 200g on Day 1 to prevent metabolic complications.
- For hyperglycemic pts, initiate PN with no more than 150g of Dextrose.
- For pts with adequate glucose control and stable electrolytes, dextrose can be titrated to goal amount by day 3 of PN.
- Dextrose provides 3.4 cal/g. Recommended glucose infusion rate: no more than 4-5mg/kg/min (dextrose in g x 1.44 wt in kg).
Monitoring

- Strict I/O – adjust volume with fluid overload (decrease IV fluids, monitor medication administered with fluids) or fluid loss (diarrhea, ostomies, fistula and drains). TPN can also be compounded to provide less volume (consult RD or Pharmacist).
- Vital signs – temperature, heart rate, respiration monitored for signs of infection or sepsis with TPN.
- Glucose monitoring – fingersticks periodically with abnormal levels.
- Metabolic monitoring – baseline Triglycerides/CMP/CBC, daily BMP/Phos/Mag and weekly PAB.
- Monitor BM, bowel sounds, GI status for possible EN/PO.
Remember

- **Initiation** – 1L/day or 50% needs and goal within 48-72 hours based on needs and medical condition (hospital specific)
- **Weaning** - Always reduce gradually over 24 hours or if stat – hang D10 IV to avoid hypoglycemia
- **Refeeding** – When NPO for prolonged time (> 5 days) and PN increased rapidly, hypokalemia, hypophosphatemia, hypomagnesemia can occur. Recommend slower titration of TPN to goal to avoid this.
Remember

- Overfeeding is more acutely dangerous than underfeeding. In TPN use, it can be caused by over estimation of energy needs, excessive dextrose infusion, and or excessive lipid infusion. Causes excess CO2 production (difficulty weaning off ventilator), hyperglycemia, steatosis.

- Remember other forms of calories – D5 – 170 cal/lit, propofol – 1.1 cal/ml

- Protein restriction is rarely appropriate
Any questions?

References

AS PEN

www.nutritioncare.org

Journal of Parenteral and Enteral Nutrition

Nutrition in Clinical Practice

ADA Pocket Guide to Parenteral Nutrition