Nutrition Guidelines in Those Hospitalized with Cirrhosis

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Protein-Calorie Malnutrition: This is extremely common in those with cirrhosis, especially decompensated disease, and increases the risk of major complications including infections, encephalopathy and ascites as well as portends poor prognosis.

Nutrition Management: A nutrition consult should be considered in all patients with cirrhosis, especially if there is evidence of protein-calorie malnutrition, ascites or encephalopathy. Consideration for early calorie counts should be entertained. Enteral nutrition improves nutritional status and liver function, reduces complications and prolongs survival in cirrhotics.

Nutritional Support Goals:

- If oral intake is feasible and adequate and no evidence for ascites
  - Hepatic diet consisting of high protein (1.2-1.5 grams/kilogram), increased dairy and vegetable protein, and high calorie diet (35-40 kcal/kg)
  - Frequent snacks should be offered
  - Supplemental drinks including Ensure or Boost should be encouraged
- If oral intake is feasible and adequate and presence of ascites
  - Hepatic diet consisting of high protein (1.2-1.5 grams/kilogram), increased dairy and vegetable protein, and high calorie diet (35-40 kcal/kg)
  - Sodium diet less than 2 grams per day
  - Fluid restriction only appropriate if sodium less than 125 mmol/L
  - Frequent snacks should be offered
  - Supplemental drinks including Ensure or Boost should be encouraged
- If oral intake is feasible but inadequate
  - Placement of nasoenteric tube for tube feeds
    - NG tube placement is safe even in the presence of esophageal varices
  - Tube feed type and goal rate determined by nutritionist
    - Whole protein formula generally recommended
    - Consider using more concentrated high-energy formula in patients with ascites
    - Use BCAA-enriched formula in patients with hepatic encephalopathy arising during enteral nutrition despite maximal medical treatment of hepatic encephalopathy
- If oral intake is not feasible (due to bleeding, encephalopathy, mechanical ventilation)
  - Placement of nasoenteric tube for tube feeds
    - NG tube placement is safe even in the presence of esophageal varices
  - Tube feed type and goal rate determined by nutritionist
    - Whole protein formula generally recommended
    - Consider using more concentrated high-energy formula in patients with ascites
    - Use BCAA-enriched formula in patients with hepatic encephalopathy arising during enteral nutrition despite maximal medical treatment of hepatic encephalopathy
**Vitamin deficiencies**: Other vitamin deficiencies are very common including thiamine, folic acid, zinc, selenium, fat-soluble vitamins (A, D, E, K), and testosterone (in men) and need aggressive replacement.

- Vitamin K 10 mg subcutaneous x 3 days.
- Thiamine 100 mg daily
- Folic acid 1 mg daily
- Multivitamin daily
- Zinc 220 mg daily
- Selenium 200 mcg daily

**References**