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Jointly provided by the Annenberg Center for Health Sciences at Eisenhower and Gastroenterology and Hepatology Advanced Practice Providers.
Staying Healthy in Patients With Cirrhosis

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Jordan Mayberry, PA-C

Advisory Board: Intercept, Clinical Area – NASH
Objectives

• Discuss dietary recommendations for patients with cirrhosis
• Discuss vaccination recommendations for patients with cirrhosis
• Discuss mental health assessments of patients with cirrhosis
Malnutrition in Patients With Cirrhosis

• The diagnosis of cirrhosis predisposes patients to developing malnutrition

• Malnutrition is a deficiency of nutrients that can lead to frailty and sarcopenia

• These three concepts are often presented simultaneously in patients with cirrhosis
Malnutrition, Frailty, Sarcopenia

Important Factors Leading to Malnutrition

- Reduced oral intake secondary to:
  - Uncontrolled ascites
  - Unpalatable food choices (low sodium)
  - Free water restriction due to fluid overload
  - Impaired level of consciousness
  - Frequent fasting due to procedures/hospitalizations
  - Psychosocial factors
Impaired Intake of Micronutrients

• Malabsorption in patients with cirrhosis can lead to worsening of malnutrition
  – Alcoholic cirrhosis
    • Impaired absorption of folate, thiamine, zinc
  – Cholestatic liver disease
    • Impaired absorption of fat-soluble vitamins
Cirrhosis Pathogenesis as Cause of Malnutrition

- Cirrhosis is known to alter the patients catabolic state causing an imbalance between energy needs and energy intake.
- Cirrhosis alters protein metabolism leading to accelerated muscle breakdown.
Physical Inactivity

• A small study of 53 liver transplant candidates
  – 76% of waking hours were spent being sedentary
  – Completed a mean of 3,000 steps per day

• Inactivity was associated higher liver transplant waitlist mortality
Goals of Management…Prevention

### Aim
- Prevent development
- Delay onset
- Early diagnosis
- Prompt initiation of treatment
- Slow progression
- Rehabilitate
- Reverse

### Assessment
- Malnutrition screening
- Assessment of muscle dysfunction
- Evaluate for etiologic risk factors
- Explore dietary preferences and barriers to exercise
- Reassess for progression of malnutrition, frailty, and/or sarcopenia despite primary and secondary preventative efforts

### Action
- Educate patients and caregivers
- Encourage positive health behaviors
- Empower patients with specific skills
- Apply management toolbox
- Co-management with a registered dietician and certified exercise physiologist/physical therapist, if available
- Refer to a registered dietician, certified exercise physiologist/physical therapist, and/or health behavior specialist for co-management
- Consider center-based rehabilitation, intensive nutritional supplementation

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Management

• Liver specific
  – Manage the etiology of liver disease
  – Manage ascites
  – Manage hepatic encephalopathy
Dietary Management

• Calorie intake
  – At least 35 kcal/kg

• Protein intake
  – 1.2 to 1.5 g/kg body weight

• Deplete micronutrients

• Frequent small meals, minimize fasting

• Consult a registered dietician
Physical Activity (FITT)

- **Frequency**
  - Aerobic: 4-7 days/week
  - Resistance: 2-3 day/week
- **Intensity**
  - Talk test
  - 3 set of 10-15 reps
- **Time**
  - Aerobic: 150 min per week
  - Resistance > 1 day/week
- **Type**
  - Aerobic, resistance, flexibility and balance
Vaccinations

• Hepatitis A
• Hepatitis B
• Influenza
• Zoster
• Pneumococcal (PCV13)
• Pneumococcal (PPSV23)
• COVID-19
Mental Health

• Patients with cirrhosis experience high rates of anxiety, depression and decrease quality of life
• Screen for anxiety and depression in patients with cirrhosis