

Navigating Nutrition and Complex Goals of Care in a Patient with Decompensated Cirrhosis: A Case Report

Wallace Ann Whatley BS, and Ashley Mullins MS, RD, LD, CNSC

Texas Christian University

Background

Decompensated alcoholic cirrhosis is failure of the liver due to alcohol use, accompanied by complications such as portal hypertension, bleeding varices, ascites, and encephalopathy.¹ Fifty-percent of cirrhosis cases were alcohol related in 2019.² Nutrition is vital in managing cirrhosis as the loss of hepatocytes from liver damage impairs gluconeogenesis, causing the body to use amino acids and fatty acids for energy, thereby increasing resting energy expenditure.^{3,4} Malnutrition is often diagnosed in patients with decompensated cirrhosis due to increased nutrition needs and comorbidities like altered mental status and ascites, which cause early satiety and negatively affect oral intake. Eighty percent of patients with decompensated cirrhosis are also diagnosed with malnutrition; therefore, nutrition interventions to treat or prevent malnutrition are essential.³

Nutritional Considerations

- In cirrhotic patients with a high risk of malnutrition, three to five meals plus snacks are encouraged to shorten fasting periods.³
- If calorie and protein needs cannot be met through oral intake, initiating enteral nutrition (EN) support may be appropriate. If EN is contraindicated, which would lead to parenteral nutrition use.³
- Nocturnal enteral/parenteral feeds may be permissible to shorten fasting periods if oral intake is tolerated but the intake does not meet nutrition needs.³
- Vitamin and mineral supplementation may be appropriate for patients with a history of alcohol abuse

Table 1. Nutrition Guidelines

Nutrients	Guideline Summary
Calories (in calories per kilogram)	35 kcals/kg of actual or estimated body weight ³⁻⁶
Protein (in grams of protein/kilogram)	1.0-1.5 g/kg of actual or estimated body weight ³⁻⁶
Micronutrients	Thiamin, riboflavin, niacin, pyridoxine, folic acid, magnesium, selenium, copper, zinc, vitamin B12, vitamin A, vitamin C, Vitamin D, Vitamin E ^{3,6}

Case Report

Case Summary

- Past medical history of hyperlipidemia, alcoholic cirrhosis s/p TIPS, hepatic encephalopathy, and GI bleeds
- The patient had a poor prognosis due to decompensation, malnutrition and ineligibility for transplant
- Patient had complex goals of care as the family was unable to accept prognosis and pushed for aggressive care measures that contradicted the prognosis including transplant

Assessment

- Nutrition-focused physical exam (NFPE): Severe muscle loss (temporalis, clavicle, quadriceps, gastrocnemius), severe fat loss (orbital, triceps), 35% weight loss in 6 months > diagnosed with severe chronic protein calorie malnutrition
- Assess micronutrient levels via labs related to cirrhosis, malnutrition and alcohol abuse
- Reported poor intake for 6 months leading to cyclic enteral nutrition through a nasogastric tube from previous admission (enteral nutrition was meeting ~60% of nutrition needs)
- Decreased oral intake related to altered mental status leading to difficulty swallowing

Nutrition Diagnosis

- Inadequate protein and energy intake related to increased needs in the setting of cirrhosis and protein calorie malnutrition as evidenced by severe muscle and fat wasting and 35% weight loss in six months

Interventions

- Nutrition needs at admit: 1642-1876 kcal (35-40 kcal/kg) and 70-94 g of protein (1.5-2.0 g/kg)
- Nutrition needs increased when the lowest body weight of admission was 94.5 lbs to 1716-1931 kcal (40-45 kcal/kg) and 64-86 g of protein (1.5-2.0 g/kg)
- Provide multivitamin and thiamin supplements
- Collaborate with family in attempt to meet their goals of care

Figure 1: Nutrition Intervention

Admission: Nocturnal feeds to encourage oral intake during the day
Standard 1.5 kcal formula at 100 mL/hr for 12 hours to provide

Follow-Up: Extended feeds to improve tolerance
Standard 1.5 kcal formula 75 mL/hr for 16 hours

Discharge: Patient made NPO, extended to continuous feeds
Standard 1.5 kcal formula running at 50 mL/hr for 24 hours

Outcome

- Patient discharged home despite multidisciplinary team recommending hospice care
- Discharged on EN to support 100% of nutrition needs
- Inadequate protein and energy needs improved due to EN use

Discussion & Application

- This patient was at a high risk of readmission due to use of a nasogastric tube, severe malnutrition and altered mental status. Meeting 100% of nutrition needs may decrease readmission risk.
- The use of the NFPE resulted in the diagnosis of severe chronic malnutrition, disqualifying the patient from a transplant. Since this conflicted the family's goals of care, it was important to work with them to form new goals of care.
- Throughout the hospital course, the nutrition intervention was adjusted to meet family goals of oral intake with texture modified foods + cyclical EN until the patient was made fully NPO.

Conclusion

While alcoholic cirrhosis is a common, well-researched disease state, there is no perfect prescription. To best treat the patient, practitioners must turn to reliable guidelines to inform plans of treatment in collaboration with considering individual goals of care. Using resources like the Code of Ethics and hospital ethical standards can inform decision-making alongside clinical guidelines for disease states. Is within ethical standards.³

References

1. Cirrhosis of the liver. British Liver trust. Accessed December 2, 2024. <https://britishlivertrust.org.uk/information-and-support/liver-conditions/cirrhosis/>
2. Medici V, Mendoza MS, Kappus MR. Liver disease. Mueller C, ed. In: The ASPEN Adult Nutrition Support Core Curriculum. 3rd ed. American Society for Parenteral and Enteral Nutrition; 2017.
3. Moss O. Cirrhosis: overview. Nutrition Care Manual. 2021. Accessed December 2, 2024. https://www-nutritioncaremanual-org.ezproxy.tcu.edu/topic.cfm?ncm_category_id=1&lv1=5522&lv2=275019&lv3=275020&ncm_toc_id=275020&ncm_heading=Nutrition%20Care
4. Friedman S. Management of alcohol-associated steatosis and alcohol-associated cirrhosis. Accessed November 10, 2024. https://www-uptodate-com.ezproxy.tcu.edu/contents/management-of-alcohol-associated-steatosis-and-alcohol-associated-cirrhosis?search=cirrhosis%20and%20enteral%20nutrition&source=search_result&selectedTitle=2%7E150&usage_type=default&display_rank=2#H1
5. EASL Clinical Practice Guidelines on nutrition in chronic liver disease. J Hepatol. 2019;70(1):172-193. doi:10.1016/j.jhep.2018.06.024 6. Bischoff S, Bernal W, Dasarathy S, et al. ESPEN practical guideline: Clinical nutrition in liver disease. Clin Nutr. 2020;39(12):3533-3562. doi:10.1016/j.clnu.2020.09.001