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Best Practice & Research Clinical Gastroenterology



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Liver disease and malnutrition



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A B S T R A C T

Keywords:

Nutrition
Liver
Cirrhosis
Subjective global assessment
Anthropometry
Clinical outcomes

Patients with hepatic disorders are exceptionally vulnerable to developing malnutrition because of the key role played by the liver in regulating the nutritional state and the energy balance. Moreover, the presence of chronic liver disorders could reduce the appetite and thus influence the nutrient intake. Poor nutritional status has been shown in various patient groups with hepatic disorders, and particularly in patients with alcoholic cirrhosis who are at high nutritional risk. It is well established that malnourished patients with liver diseases generally have a higher risk of developing adverse clinical outcomes and increased healthcare costs. Nutrition screening with the Subjective Global Assessment and anthropometric measurements are an important first step in the early identification of malnutrition and initiates the whole nutrition care process. It is therefore important for appropriate nutrition policies and protocols to be implemented so that all patients with chronic liver diseases are monitored closely from a nutritional standpoint. Early and evidence-based nutritional interventions are eagerly needed to minimize the nutritional decline associated with chronic liver disorders and ultimately improve the prognosis of such patients. This review includes a comprehensive analysis of methods to identify malnutrition in patients with chronic liver diseases as well as the extent and impact of the malnutrition problem in selected patient populations.

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Introduction

Although there is no single generally agreed definition of malnutrition, this condition is commonly defined by the presence of nutrient imbalance as a result of the lack of proper nutrition. This conceptualization defines malnutrition as a suboptimal nutritional status associated with poor clinical outcomes. In general, the term ‘malnutrition’ should not be used interchangeably with ‘undernutrition’ because malnutrition can be caused not only by a nutritional deficit but also by an excess intake of nutrients (i.e. over-nutrition).

Patients with hepatic disorders are exceptionally vulnerable to developing malnutrition because of the key role played by the liver in regulating the nutritional state and the energy balance. Moreover, the presence of chronic liver disorders could reduce the appetite and thus influence the nutrient intake. Therefore, the causes of malnutrition in this patient population are multifactorial in nature (Table 1). A prevalence ranging from 65% to 90% has been reported in different forms of liver disease using various definition of malnutrition [1–5]. Importantly, alcoholic liver disease has been shown to be a strong predictor for malnutrition due to the numerous malnutrition risk factors associated with chronic alcohol abuse [4].

Despite the evidence on malnutrition prevalence in chronic liver diseases, this condition continues to remain under-recognized, under-diagnosed, and under-treated. There are at least two reasons that might explain the suboptimal level of malnutrition recognition in the hepatology practice. The first may be related to the lack of good practice guidelines for recognizing this condition. Another potential explanation is the tendency to mainly focus on liver function tests and give less credence to other important components of care such as nutritional status. With the alarmingly high rates of malnutrition observed in patients with hepatic disorders, physicians should be strongly urged to focus on addressing the challenges of its detection, diagnosis, and treatment.

This review includes a comprehensive analysis of methods to identify malnutrition in patients with chronic liver diseases as well as the extent and impact of the malnutrition problem in this population.

Table 1

Causes of malnutrition in liver diseases [4,5,22,87–90].

Decreased intake of nutrients

- Abdominal distention (ascites, splenomegaly)
- Nausea and vomiting
- Anorexia-chronic oesophagitis and portal gastropathy
- Encephalopathy-related decreased oral intake
- Impaired gastric emptying
- Iatrogenic causes (unnecessary restriction of protein for encephalopathy, repeated fasting periods due to diagnostic tests)
- Impairment of taste (zinc deficiency)
- Inhibition of gluconeogenesis due to alcohol abuse
- Alcohol-related malabsorption of some nutrients (folate, vitamin B12, thiamine, magnesium)
- Poor socioeconomic status
- Recurrent uncontrolled infections in cirrhotic patients

Metabolic derangements

- Insulin resistance and its consequences
- Increase in resting metabolic rate

Malabsorption

- Impairment of bile flow in chronic cholestasis
- Bacterial overgrowth
- Concomitant chronic pancreatitis (particularly in alcoholic steatohepatitis)
- Concomitant celiac disease with chronic autoimmune liver diseases (primary biliary cirrhosis, primary sclerosing cholangitis, autoimmune hepatitis)

Drug- or toxin-induced malnutrition

- Use of cholestyramine and colestipol leading to lipid malabsorption
 - Metformin use for insulin resistance leading to vitamin B12 deficiency
 - Chronic steroid use leading to calcium and vitamin D malabsorption
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