



CIRRHOSIS MANAGEMENT

Cirrhosis is an irreversible, chronic condition of liver damage that is currently the 8th leading cause of death in the United States. Hallmark pathophysiological features of cirrhosis include progressive liver injury and fibrosis that may cause ascites, spontaneous bacterial peritonitis, hepatic encephalopathy, variceal hemorrhage, hepatorenal syndrome, and hepatocellular carcinoma. This issue of *CLIPs* briefly summarizes an article that outlines treatment strategies for patients with cirrhosis. If you need further information, please contact the Center for Healthcare Innovation and Patient Outcomes Research (CHIPOR) at chipor@samford.edu.

Ge PS, Runyon BA. Treatment of patients with cirrhosis. *N Eng J Med.* 2016;375:767-777.

Etiology of cirrhosis

- Hepatitis B virus infection (HBV), hepatitis C virus infection (HCV), alcoholism, and nonalcoholic steatohepatitis are the major causes of cirrhosis. HCV and nonalcoholic steatohepatitis are the most common indications for liver transplantation in the United States.
- Cirrhosis may be due to a combination of factors including obesity, alcoholism, and chronic viral hepatitis.

Prognosis of cirrhosis diagnosis

- Compensated cirrhosis carries an increased risk of developing ascites, hepatic encephalopathy, and gastrointestinal bleeding. Approximately 15% of patients diagnosed with hepatitis will die within 1 year and 44% die with 5 years.
- The annual incidence of hepatocellular carcinoma secondary to cirrhosis is 5%. Patients with limited hepatocellular carcinoma have a median survival time of 2 years and 6 months for patients with advanced hepatocellular carcinoma.

Non-pharmacological treatment of cirrhosis

- Lifestyle counseling on methods to avoid obesity, needle sharing, and excessive alcohol consumption is beneficial to reduce the risk of developing cirrhosis.
- Screening is a useful tool for patients who are at high-risk for developing cirrhosis (i.e., patients with hepatitis B and C viral infections).
- High protein diet is essential for patients with cirrhosis because malnutrition occurs in 20-60% of these patients, which is linked to a deficiency in mental status. A daily protein intake of 1.0-1.5g/ kg of dry body weight is recommended for patients with cirrhosis. In addition to a high protein diet, a strict, 2g daily limit of sodium intake is recommended for patients with cirrhosis.
- Care coordinators are individuals that aid patients in their transition from inpatient to outpatient care by reconciling patients' medications, providing telephonic reminders to patients regarding upcoming clinic visits, and placing appropriate, portable medical equipment in patients' homes and counseling on the appropriate use of the equipment. These coordinators have been useful for patients with cirrhosis to improve their quality of life and decrease the occurrence of adverse events associated with their diagnosis

Pharmacological treatment of cirrhosis

- Patients with cirrhosis and hypertension experience a gradual decline in blood pressure as their cirrhosis progresses.
- Patients with a mean arterial pressure of 82 mmHg or less or decompensated cirrhosis should not receive antihypertensive agents due to the reduced risk of survival in these patients.

Beta Blockers

- Nonselective beta blockers are indicated for primary and secondary prophylaxis for variceal hemorrhage to reduce portal hypertension secondary to cirrhosis. Investigators have developed a “window hypothesis” postulating the time period in which a cirrhosis patient may receive beta blockers and experience favorable outcomes.
- This clinical window is between the development of moderate-to-large esophageal varices and the development of refractory ascites, hypotension, spontaneous bacterial peritonitis, sepsis, or severe alcoholic hepatitis.
- The use of beta blockers in patients with end stage cirrhosis remains controversial and requires further study.

Analgesics

- Nonsteroidal anti-inflammatory agents are contraindicated in patients with cirrhosis due to the risk of acute renal failure and gastrointestinal bleeding.
- Low dose aspirin may be considered for use in patients if they have cardiovascular disease that outweighs the severity of cirrhosis.
- Opiates should be avoided due to their risk of precipitating hepatic encephalopathy.
- Low dose tramadol and topical analgesics are safe for use.
- Acetaminophen is safe for use in patients that do not consume alcohol. The Food and Drug Administration provides a recommendation of a maximum 4 gram daily dose for all patients including patients with cirrhosis, while hepatologists recommend a maximum 2 gram daily dose for patients.

Proton Pump Inhibitors

- Proton pump inhibitors are safe for use in patients with cirrhosis if there is an indication for use.
- Studies have shown widespread, indiscriminate use of proton pump inhibitors without an indication, which has led to an increased risk for infection.

Benzodiazepines

- Short acting benzodiazepines, lorazepam and oxazepam, may be used for patients with alcoholic hepatitis or cirrhosis with severe symptoms of alcohol withdrawal.

Statins

- Statins are relatively safe for use in patients with cirrhosis and have favorable cardiovascular effects.
- The Drug-Induced Liver Injury Network reports that statin use is not likely to cause hepatic damage.
- The use of statins does not warrant routine monitoring of alanine aminotransferase in patients.

Selective vasopressin V2-receptor antagonists

- These agents are not recommended for use in patients with cirrhosis or ascites.

Surgical procedures for the treatment of cirrhosis

- Invasive procedures in patients with cirrhosis should be performed if benefit outweighs the risk.
- Endoscopic procedures can be performed safely in patients with cirrhosis with minimal risk of injury.
- Paracentesis is a safe and effective procedure to perform in patients with ascites to probe for the presence of spontaneous bacterial peritonitis or secondary bacterial peritonitis. Generally, the earlier the paracentesis is performed in patients with ascites and suspected spontaneous bacterial peritonitis, the higher the survival rate.

Summary

- The treatment of cirrhosis involves lifestyle modifications, pharmacological agents, and surgical procedures.
- Before performing a surgical procedure or implementing a pharmacological regimen, the benefits should be weighed against the risks of therapy.