

Optimizing the Health Disparities in Patients with Moderate to Severe Liver Cirrhosis

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Description

Cirrhosis is a chronic and progressive liver disease characterized by the replacement of healthy liver tissue with scar tissue, leading to impaired liver function. This condition is often the result of long-term damage to the liver from various causes, including chronic alcoholism, viral hepatitis, fatty liver disease, autoimmune disorders, and certain genetic conditions. Excessive alcohol consumption over a prolonged period can lead to alcoholic liver disease, a major cause of cirrhosis in many developed countries. Chronic infection with hepatitis B or C viruses can cause inflammation and damage to the liver, eventually leading to cirrhosis if left untreated. Obesity, insulin resistance, and metabolic syndrome can lead to the accumulation of fat in the liver, which can progress to inflammation and eventually cirrhosis. Body's immune system mistakenly attacks the liver, leading to chronic inflammation and damage. Biliary Atresia is a rare congenital condition where the bile ducts inside or outside the liver are abnormally narrow, blocked, or absent, leading to liver damage and cirrhosis, especially if not treated early in life.

Certain genetic conditions, such as hemochromatosis (excessive iron accumulation in the liver), Wilson's disease (abnormal copper metabolism), and alpha-1 antitrypsin deficiency (an enzyme deficiency affecting lung and liver function), can predispose individuals to cirrhosis. Cirrhosis develops gradually over many years as liver cells are repeatedly injured and replaced by scar tissue. The progression of cirrhosis can be divided into several stages: The initial stage involves inflammation in response to liver injury, leading to the activation of hepatic stellate cells, which are responsible for producing collagen and other proteins that form scar tissue. Continued inflammation and fibrosis result in the deposition of increasing amounts of scar tissue within the liver, disrupting its normal architecture and impairing blood flow. As cirrhosis advances, the liver attempts to regenerate by forming small regenerative nodules surrounded by fibrous bands. This gives the liver a nodular appearance on imaging studies.

Eventually, as the liver function deteriorates further, patients may develop complications such as ascites (fluid buildup in the abdomen), hepatic encephalopathy (confusion and altered mental status due to liver dysfunction), variceal bleeding (bleeding from enlarged veins in

the esophagus or stomach), and hepatorenal syndrome (kidney failure secondary to liver dysfunction). The symptoms of cirrhosis vary depending on the stage of the disease and the presence of complications. In the early stages, patients may be asymptomatic or may experience nonspecific symptoms such as fatigue, weakness, and loss of appetite. As the disease progresses, symptoms may include, yellowing of the skin and eyes due to impaired bilirubin metabolism, accumulation of fluid in the abdominal cavity, causing abdominal distension and discomfort, swelling of the legs and feet due to fluid retention, impaired liver function can lead to decreased production of clotting factors, resulting in easy bruising and prolonged bleeding. Diagnosing cirrhosis typically involves a combination of clinical evaluation, laboratory tests, imaging studies, and sometimes liver biopsy. The management of cirrhosis aims to slow disease progression, prevent complications, and improve quality of life.

Depending on the underlying cause of cirrhosis, interventions such as alcohol cessation, antiviral therapy for hepatitis B or C, and weight loss and lifestyle modifications for NAFLD/NASH may be recommended. Medications may be prescribed to manage symptoms such as ascites (diuretics), hepatic encephalopathy (lactulose, rifaximin), and pruritus (cholestyramine, antihistamines). Patients with cirrhosis often have malnutrition and muscle wasting, so a well-balanced diet with adequate protein and calorie intake is essential.

Patients with cirrhosis are at increased risk of developing Hepatocellular Carcinoma (HCC) and other complications, so regular screening and surveillance with imaging studies and blood tests are recommended. Complications such as variceal bleeding, ascites, and hepatic encephalopathy require specific interventions such as endoscopic variceal ligation, paracentesis, and lactulose therapy, respectively. For patients with advanced cirrhosis and liver failure, liver transplantation may be considered as a definitive treatment option. Transplantation offers the best chance of long-term survival and improved quality of life for eligible candidates. The underlying cause, the severity of liver damage, the existence of complications, and the patient's reaction to treatment are some of the variables that affect the prognosis of cirrhosis. Even though cirrhosis is a dangerous and possibly fatal illness, early detection and effective treatment can help in diagnosing the issue.