

A Case Study: Decompensated Liver Disease

S. Kavitha

Abstract: *Decompensated liver disease is one of the life threatening condition characterized by impaired liver function, ascites, variceal bleeding and other manifestations. The transition from compensated cirrhosis to decompensated cirrhosis occurs at a rate 5% to 7% per year. Once decompensated occur it is the liver function totally disturbed and it could not be reversible.*

Keywords: decompensated, cirrhosis, scarring, hepatitis, portal hypertension

1. Introduction

Decompensated liver disease also known as decompensated cirrhosis, occurs when a persons liver scarring (cirrhosis) progress to a stage where it can no longer effectively perform its essential functions. This leads to severe symptoms and complications, potentially requiring a liver transplant.

Definition

Decompensated liver disease is defined as an deterioration in liver function.

2. Review of Literature

1) "Towards a new definition of decompensated cirrhosis
Gennaro D'Amico, Mauro Bernardi, Paolo Angeli
Journal of hepatology 76 (1), 202 - 207, 2022

There is a universal agreement that the occurrence of clinical complications, such as ascites, hepatic encephalopathy, gastrointestinal bleeding, and jaundice mark the transition from the compensated to the decompensated stage of cirrhosis. Decompensation is associated with a substantial worsening of patient prognosis and is therefore considered the most important stratification variable for the risk of death. However, this classification is an oversimplification, as it does not discriminate between the prognostic subgroups that characterize the course ..."

2) "Acute - on - chronic and decompensated chronic liver failure: definitions, epidemiology, and prognostication
Jody C Olson
Critical care clinics 32 (3), 301 - 309, 2016

Strictly defined, cirrhosis is the "histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury." 1 Chronic pathologic processes that result in cirrhosis include chronic viral infections, excess alcohol use, non alcoholic fatty liver disease (NAFLD), autoimmune diseases, genetic diseases of copper and iron metabolism, alpha1 - antitrypsin deficiency, and biliary obstruction. Regardless of the type of liver insult, ongoing inflammation results in chronic liver disease via two distinct, but closely related ..."

Risk factors

- Alcoholism
- Viral disease such as hepatitis B and hepatitis C infection
- Obesity
- Metabolic syndrome like high blood sugar level
- Wilson disease

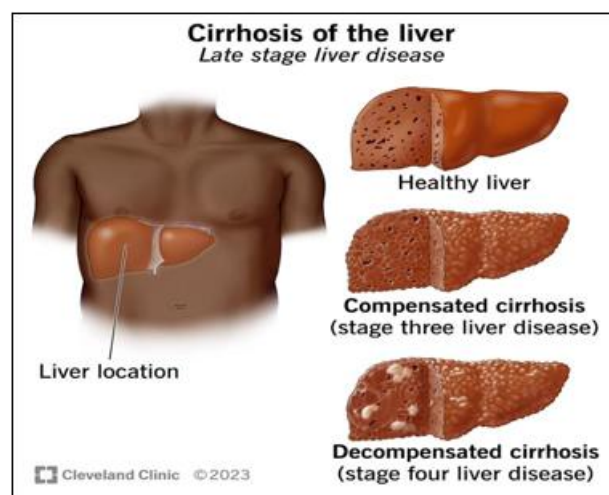
- Non alcoholic fatty liver exposure of certain toxins and medication
- Genetic predisposition

Etiology

- Portal hypertension
- Chronic viral hepatitis
- Alcohol related liver disease
- Non alcoholic fatty liver
- Autoimmune liver disease (Wilson disease – excessive iron build up in the liver, brain and other organs)
- Biliary diseases
- Galactosemia or glycogen storage disease (inherited sugar metabolism disorders)
- Primary biliary cholangitis (destruction of bile ducts)
- Primary sclerosing cholangitis (hardening and scarring of the bile ducts)

Pathophysiology

Due to the etiological factors like alcoholism, hepatitis, metabolic disease and portal hypertension it leads to the changes in the liver. Portal hypertension one of the major cause of decompensated liver disease. This leads to the development of varices (enlarged veins) in the esophagus, which can rupture and bleed, causing potentially life - threatening hemorrhages.



Case study of Mrs. X

A 49 years old male has admitted in the hospital for the complaints of fever, headache, vomiting, loss of appetite for past 10 days ago and mild hepatomegaly, ascites yellowish discolouration of eyes for past 5 days. He was a known case right leg elephantiasis and right leg cellulitis for past 5 years ago. He was chronic alcoholic for past 20 years.

Clinical manifestations

- Yellowish discolouration of eyes
- Ascites
- Hepatomegaly
- Fatigue and weakness
- Loss of appetite
- Fever
- Leg pain
- Headache

Diagnostic findings

- History collection
- Physical examination
- Complete blood count
- Bleeding time
- Clotting time
- Liver function test like SGOT, SGPT, bilirubin
- Ultrasonography abdomen and pelvis
- Viral hepatitis serologies

Medical management

The management of decompensated liver disease focuses on addressing the underlying cause, managing symptoms and preventing complications with liver transplantation as the definite treatment for the end stage liver disease

Pharmacological therapy

Inj. Thiamine 2cc IV tds

Inj. Pantoprazole 40 mg IV bd

Inj. Cefotaxime 1 gm IV bd

Inj. emeset 4mg IV bd

T. Trozen 300 mg bd

T. Xemcholic 300 mg bd

For ascites diuretics and a low sodium diet can help reduce fluid build up

In portal hypertension medications like beta blockers administered

Antibiotics are used to treat infections

Nutritional support like increased protein intake and low sodium diet and high caloric diet advised

Surgical management

- Liver transplantation
- Hepatic resection
- Transjugular intrahepatic portosystemic shunt

Nursing management

- Assess the patient condition and monitor vital signs
- Check the patient for any complaints
- Maintained intake out put chart
- Administered medications as per doctors order
- Advice the patient avoid alcohol consumption
- Advice the patient take low sodium diet and high protein diet avoid high fat contain diet
- Advice the patient adopt healthy life styles

Nursing diagnosis

- Hyperthermia related to disease condition as evidenced by checking vital signs

- Acute pain related to disease condition as evidenced by numerical pain scale
- Fluid volume deficit related to vomiting secondary to fever as evidenced by decreased skin turgor and dry lips
- Imbalanced nutrition less than body requirement related to loss of appetite
- Sleep pattern disturbance related to pain

Complications

- Ascites
- Jaundice
- Hepatic encephalopathy
- Portal hypertension
- Gastroesophageal varices
- Variceal bleeding splenomegaly

3. Conclusion

Decompensated liver disease is one of condition that affect the liver function. It mainly caused by alcoholism, infections and other liver diseases. Early diagnosis and treatment is improve the prognosis. Otherwise liver transplantation is one of the life saving option for decompensated liver disease.

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Author Profile

Kavitha was completed her B. Sc (Nursing) in College of Nursing, Madurai Medical College, Madurai, Tamilnadu, India 2016.