

Cirrhosis of Liver

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Abstract

Liver is vulnerable to a wide variety of metabolic, toxic, microbial and circulatory insults. In some instances, the disease is primary while in others the hepatic involvement is secondary to cardiac de-compensation, alcoholism or extrahepatic infections. Quite rightly liver is called as “the custodian of milieu interior. Cirrhosis of liver disease is serious and potentially fatal consequences of most commonly alcohol use. The World Health Organization (WHO) estimate that 140 million people worldwide suffer from alcohol dependency causing damage to liver and economics. Recent years cirrhosis of liver disease incidence is increasing due change in life style and habit of alcohol consumption in public. The public need to educated about ill effect of alcohol consumption in order to prevent the disease and its complication of disease. Nurses play vital role health care delivery system so nurses need to counsel the patient alcoholic.

Keywords: World Health Organization; Cirrhosis of Liver Disease; De-Compensation.

Introduction

Cirrhosis represents a late stage of progressive hepatic fibrosis characterized by distortion of the hepatic architecture and the formation of regenerative nodules. It is generally considered to be irreversible in its advanced stages [1]. While alcohol abuse is the most common cause of cirrhosis in the western world, hepatitis B is the primary cause in the third world. The only relatively acceptable remedy for this condition is liver transplantation, currently performed with many limitations in Iran because of complex operation technique and high expenses [2].

Cirrhosis of the liver is the third leading cause of death in people between the ages of 25 and 65 years, exceeded only by cardiovascular disease and cancer. Cirrhosis and chronic liver diseases accounted for more than 25,000 death and 373,000 hospital discharges annually in the adult in the United States. The cost of cirrhosis in terms of human suffering, financial burden, and loss of productive life is devastating [3].

Definition

Cirrhosis is a chronic progressive disease of liver characterized by extensive degeneration and destruction of the liver parenchymal cells [4].

Etiology and Types

- Alcoholic (previously called Laennec's) cirrhosis, also called portal or nutritional cirrhosis is also associated with alcohol abuse. The change in the liver from excessive alcohol intake is an accumulation of fat in the liver cells. Uncomplicated fatty changes in the liver are potentially reversible if the person stops drinking alcohol. If alcohol abuse continuous, widespread scar formation occurs throughout liver.

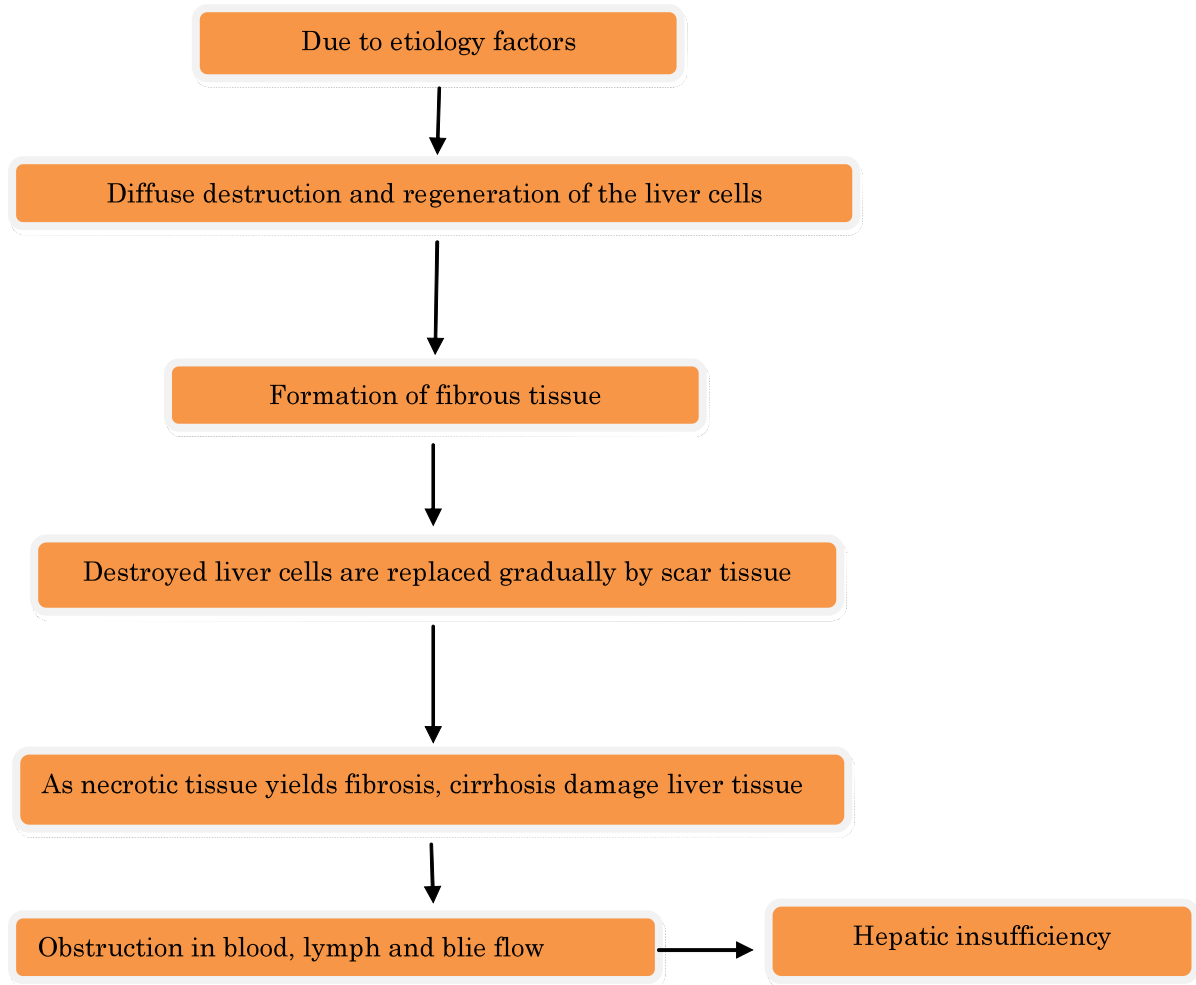
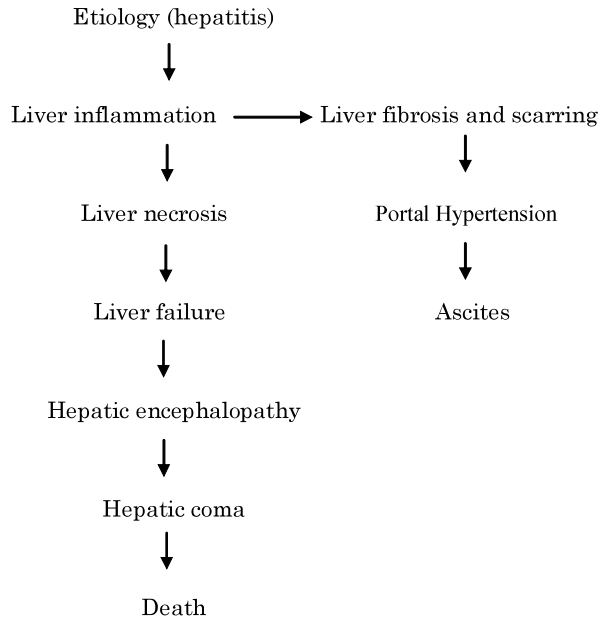
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- Postnecrotic cirrhosis—It is complication of viral, toxic, or idiopathic (autoimmune) hepatitis
- Biliary cirrhosis – it is associated with chronic biliary obstruction and infection. There is diffuse fibrosis of the liver with jaundice as the main features.
- Cardiac cirrhosis – it resulting from long standing, severe right sided heart failure in patients with cor pulmonale, constrictive pericarditis and tricuspid insufficiency [4].

Pathophysiology

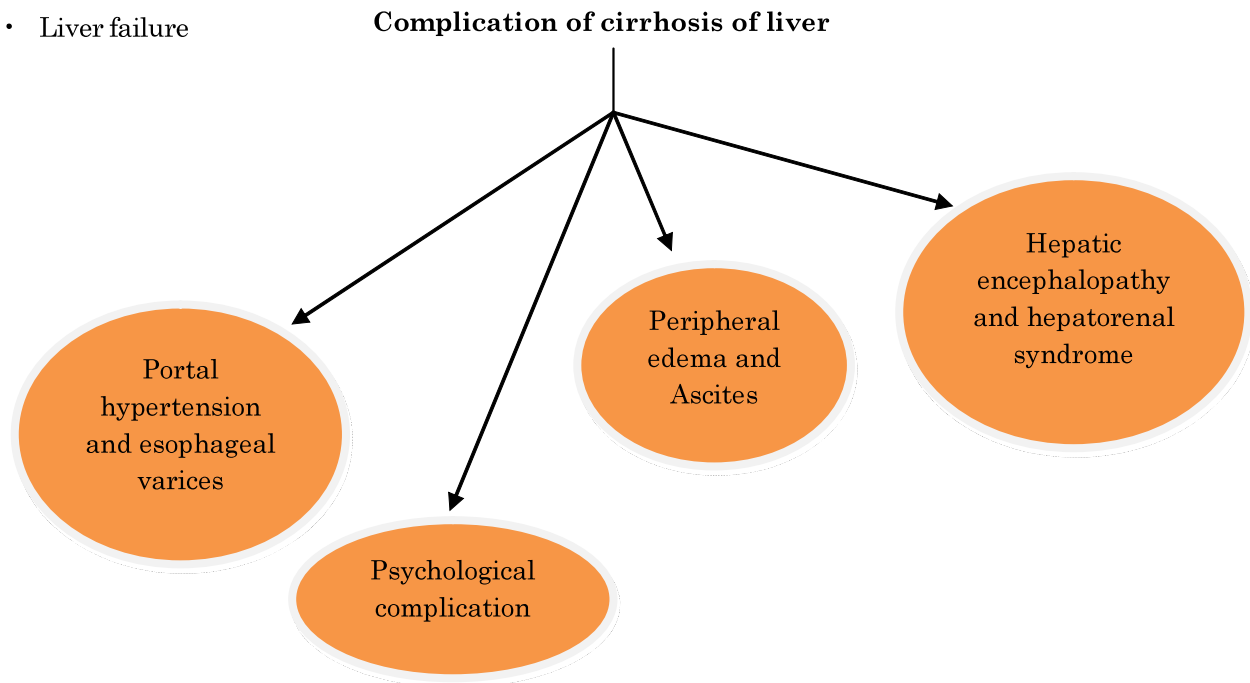


Clinical Manifestation

- *Early manifestation*
- Anorexia
- Dyspepsia
- Flatulence
- Nausea and vomiting
- Change in bowel habits (diarrhoea)
- Altered metabolism of carbohydrate , fat and protein
- Abdominal pain described as a dull heavy feeling in the right upper quadrant or epigastrium
- Pain may be due to swelling and stretching of the liver capsule
- Fever
- Lassitude
- Slight weight loss
- Enlargement of liver and spleen ⁵

- *Later manifestation*
- Liver failure

- Portal hypertension
- Jaundice
- Peripheral edema
- Ascites
- Endocrine disturbance
- Peripheral neuropathies
- Spider angiomas (telangiectasia or spider nevi)
- Palmar erythema is located on the palms hands
- Spider like branches in nose , cheks , upper trunk, neck and shoulders
- Hematologic problems , thrombocytopenia, leukopenia, anemia and coagulation , hemorrhagic phenomena or bleeding tendencies, epistaxis, purpura, petechiae, gingival bleeding and heavy menstrual bleeding
- Endocrine problems , men gynecomastia , loss of auxiliary and pubic hair, testicular atrophy and impotence with loss of libido
- Peripheral neuropathy [5]



Complication of Cirrhosis of Liver

Portal Hypertension

Obstructed blood flow through the damaged liver results in in-creased blood pressure (portal hypertension) throughout the portal venous system.

Although portal hypertension is commonly associated with hepatic cirrhosis, it can also occur with noncirrhotic liver disease [6].

Esophageal Varices

Bleeding or hemorrhage from esophageal varices

occurs in approximately one third of patients with cirrhosis and varices.

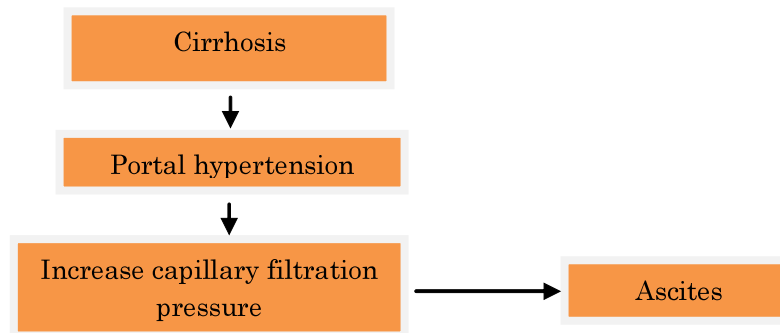
Peripheral Edema and Ascites

Peripheral edema sometimes precedes ascites, but some patients its development coincide with or

occurs Ascites; its accumulation of serous fluid in the peritoneal or abdominal cavity. it common manifestation of cirrhosis.

Hepatic Encephalopathy

It is a neuropsychiatric manifestation of liver damage. Hepatic encephalopathy can occur in any



condition in which liver damage causes ammonia enter the systemic circulation without liver detoxification [6].

- Avoidance of alcohol, minimize or avoid aspirin, acetaminophen
- Nonsteroids anti inflammatory agents

☞ Diagnostic Evaluation

- History collection
- Physical examination
- Liver function test
- Liver biopsy
- Esophagogastroduodenoscopy
- Angiography
- CT scan
- Liver ultrasound
- Serum electrolyte
- Prothrombin
- Serum albumin
- CBC
- Testing of stool for occult blood
- Upper GI barium swallow [7,8,9]

☞ Management

Conservative management

- Administration of B-complex vitamins
- Rest

Ascities Management

- Administration of 3000- caloric, high carbohydrate, high –protein low fat
- Low sodium diet
- Diuretics- eg, amiloride, triamterene
- Paracentesis – performed to remove ascetic fluid
- Peritoneovenous shunt –it provides continuous reinfusion of ascetic fluid into venous system.

Esophageal Varices Management

- Beta – adrenergic blockers
- Vasopressin
- Endoscopy sclerotherapy
- Ballon tamponade
- Octreotide
- Surgical shunting
- Transjugular intrahepatic porto systemic shunt

Hepatic Encephalopathy Management

- Antibiotics to decrease bacterial flora in GI tract
- Lactulose (cephuac) [7,8,9]

Case Summary

72 year old male, weight 75 Kg came to the hospital with the complaints of Abdominal distension, vomiting, abdominal pain for last 3 days, fever, stomach-ache 2days, chest pain, not passing

stool since 1 day, Icterus, Diffuse tenderness, stiffing dullness patient past History of hypertension, type II Diabetic mellitus, Chronic Kidney disease and chronic alcoholic, Heart Rate-70 b/mts, Respiratory Rate- 26 b/mts, BP -130/90 mm hg, Abdominal girth 75cm. patient blood investigation were done following.

Name of the investigation	Patient value	Normal value
Urea	71 mg	15 to 50 mg
Creatinine	1.6 mg	0.5 to 1.2 mg
Direct bilirubin	7.0mg / dl	0.1-0.3mg/dl
Total Protein	6.0 g /L	6.0-8.0g/L
Albumin	25 g /dl	3.5-5.0g/dl
Globulin	3.4 g/dl	2.0-3.5g/dl
AST / SGOT	52	0 to 50 I U
ALT /SGPT	19 U/ L	0 to50 IU
Alkaline phosphate	110 U/L	80 to 240 IU
Hb	7.9mg /dl	13.5 TO 18 g/100mL
PCV	24.0 %	40-50%

Medication

Patient was receiving the medication such as Inj – Pan, Inj- Ceftriaxone, Inj- Metronidazole, Inj- Lante, Tab-Ecospirin, tab- Lasix, Tab-Aldactone, Tab-Clopilet, Tab- Atrox, Tab- Isolazine, Tab- Udiliv,

moderate to high in protein; limit sodium and fluid as necessary. Provide liquid supplements as indicated.

- Recommend cessation of smoking. Provide teaching on the possible negative effects of smoking. Reduces excessive gastric stimulation and risk of irritation and may lead to bleeding.

Nursing Management

1. *Nursing diagnosis:* Imbalance nutrition less than body requirement related to anorexia [10,4].

Nursing Outcome

Maintain the nutritional status's

Nursing Intervention

- Assesses the patient Intake and output, weight daily.
- Restrict intake of caffeine, gas-producing or spicy and excessively hot or cold foods.
- Encourage the patient have small and frequent food, balance diet
- Use frequent oral hygiene to promote comfort unless it stimulates nausea
- Educate the patient use of nonpharmacological technique
- Promote undisturbed rest periods, especially before meals. Conserving energy reduces metabolic demands on the liver and promotes cellular regeneration.
- Refer to dietitian to provide diet high in calories and simple carbohydrates, low in fat, and

Evaluation

- Patient nutritional status maintained
- Patient Weight, intake and output

2. *Nursing Diagnosis:* Fluid volume excess related to portal hypertension as evidenced by weight gain [10,4].

Nursing outcome: Maintain fluid status

Nursing Intervention

- Measure I&O, weigh daily, and note gain of more than 0.5 kg/day. To assess circulating volume status, developing or resolution of fluid shifts, and response to therapeutic regimen. Positive balance/weight gain often reflects continuing fluid retention. Note: Decreased circulating volume (fluid shifts) may directly affect renal function and urineoutput, resulting in hepatorenal syndrome.
- Assess respiratory status, noting increased respiratory rate, dyspnea. Indicative of pulmonary congestion.

- Measure abdominal girth. Reflects accumulation of fluid (ascites) resulting from loss of plasma proteins/fluid into peritoneal space. Note: Excessive fluid accumulation can reduce circulating volume, creating a deficit (signs of dehydration).
- Monitor serum albumin and electrolytes (particularly potassium and sodium). Decreased serum albumin affects plasmacolloid osmotic pressure, resulting in edema formation. Reduced renal blood flow accompanied by elevated ADH and aldosterone levels and the use of diuretics(to reduce total body water) may cause various electrolyte shifts/imbances.
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- Administer salt-free albumin/plasma expanders as indicated. Albumin may be used to increase the colloid osmotic pressure in the vascular compartment (pulling fluid into vascular space), thereby increasing effective circulating volume and decreasing formation of ascites.

Evaluation

- Maintained blood pressure and urinary output.
- Maintained intake output chart.

3. *Nursing Diagnosis:* Impaired skin integrity related to edema, ascites and pruritus as evidenced by itching [10,4].

Nursing Outcome: Maintain skin integrity

Nursing Intervention

- Instruct patient to keep fingernails trimmed short to prevent excoriation due to pruritus secondary to deposit of bile salts on skin.
- Apply medicated creams and lotions to relieve itching, avoiding use systemic drugs that require liver metabolism.
- Recommend elevating lower extremities. Enhances venous return and reduces edema formation in extremities.

- Keep linens dry and free of wrinkles. Moisture aggravates pruritus and increases risk of skin breakdown.
- Suggest clipping fingernails short; provide mittens/gloves if indicated. Prevents patient from inadvertently injuring the skin, especially while sleeping.
- Provide perineal care following urination and bowel movement. Prevents skin excoriation breakdown from bile salts.
- Use alternating pressure mattress, egg-crate mattress, waterbed, sheepskins, as indicated. Reduces dermal pressure, increases circulation, and diminishes risk of tissue ischemia

Evaluation

- Maintained the patient skin integrity
- Patient pruritus level reduced

4. *Nursing Diagnosis:* Ineffective breathing pattern related to accumulation fluids in abdomen (Ascites) [10,4].

Nursing Outcome: Maintain the normal breathing pattern.

Nursing Intervention

- Assess the RP, rhythm, saturation, ABG values
- Place the patient in High fowler's positions. it help in antero posterior lung expansion
- Educate the patient about breathing exercise in order to improve lung ventilation
- Provide the comfort device such as back rest. it helps in lung expansion
- Administered oxygen as prescribed by physician
- Restrict the fluids to prevent the lung congestions.
- Provided routine oral care in every shift

Evaluation

- Patient respiratory rate maintained, ABG values and Saturation.

5. *Nursing Diagnosis:* Dysfunctional family process related to abuse of alcoholism and inadequate coping skills [10,4].

Nursing Outcome

- Family confronts problems and involves family member in decision making

- Family uses available social support for treatment of alcohol use

Nursing Intervention

- Determine the psychologic burden of prognosis for family determine appropriate intervene
- Accept the family values in a non judgemental manner
- Respect support adaptive coping mechanisms used by family to facilitate healthy coping
- Provide opportunities for peer group support
- Refer for self help groups
- Refer for family therapy

Evaluation

- Family process maintained

Conclusion

Nurses working in hospital play a major role in educating the patient about cirrhosis of liver disease, because the recent day's cirrhosis of liver disease patient ratio increasing day by day, the burden of disease increasing in Country and worldwide. We are the health care professional need to counsel the patient and family in order to overcome the ill effect of alcoholism. Identification of early stage of cirrhosis of liver important factor to reduce the mortality rate of disease. This case study patient was diagnosed early stage cirrhosis of liver disease he had been counselled and educated along with family member in order to overcome alcoholism and preventing the complication of disease.

Conflict of Interest

The author has declared no conflict of interest

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