Cirrhosis of liver

- It is a end stage liver disease characterized by fibrosis and regenerative nodule formation.
- Major Cause of Premature Death.

Causes

A - Alchol, Non-Alcholic Fatty liver Disease.

B - Billiary cholangitis.
Billiary Cirrhosis, Cystic fibrosis.

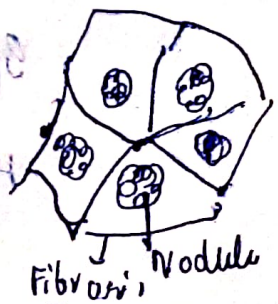
C - Cryptogenic, Chronic Venous outflow obstruction, Chronic liver Disease.
- Chronic Viral Hepatitis (B or C)

G - Genetic - Haemochromatosis
Wilsons Disease — α, antitrypsin deficiency.

I - Immune → Autoimmune liver disease.
Sclerosing cholangitis.

Pathophysiology

During recurrent injury
↓
Activation of stellate cells (usually stores Vitamin A) by cytokines by kupffer cells & Hepatocytes.
↓
Transformation into myofibroblast.
↓
Collagen synthesis.
↓
Fibrosis (Cirrhosis)
↓
Colonies of living liver cells (Nodules) surrounded by fibrosis
↓
Portal Hypertension



Histologically classified into two
i) Micronodular cirrhosis → ≤1mm - in AFLD
ii) Macronodular cirrhosis → large nodules of various shapes

① Complication
Fibrosis → ↑ Pressure → ↓ Liver Function

① ↓ Detoxification → ↑ Ammonia → BBB
↓
Hepatic Encephalopathy

② ↓ Estrogen Metabolism
↳ Not extracted → ↑ Estrogen in blood
i) Gynecomastia, Testicular atrophy, Impotence, Irregular menses, amenorrhea
ii) Spider angioma or Spider naevus
↳ Dilatation of arteriole mostly in Sun exposed areas, 1-2mm in around nipple
iii) Palmar erythema

③ ↓ Bilirubin Conjugation
↑ Unconjugated Bilirubin
↓
Jaundice

④ ↓ Albumin production → Hypoalbuminemia

⑤ ↓ Clotting factors → Haemorrhagic

② Blood Backs Up in Spleen
↓
Splenomegaly
↓
Hypersplenism → Anemia
→ Leukemia
→ Thrombocytopenia
↓

③ Endothelial cells of arteries release Nitric oxide

↓
Arteries Dilate
↓
↓ Blood Pressure → Aldosterone
↓ ↓
↓ Low Blood flow Kidney retain
↓ Na & H_2O
Low filtrate ↓
↓ Excess fluid into
Hepatorenal Cavities
failure. ↓
Ascites (7-L)
↙ Bacteria
↓
Bacterial
Peritonitis

④ Oesophageal varices, Haemorrhoids, Caput Medusae

Clinical features

1) Early → Still does the work (Compensated)
↳ Non Specific (Weight loss, weakness, fatigue)
→ Asymptomatic

2) Later → Decompensated
↓
i) Jaundice → Pruritis, Yellow skin.
ii) Hepatic Encephalopathy → Asterixis, Coma, Altered Consciousness, Confusion, Lethargy
iii) Men - Gynecomastia, Impotence, Testicular atrophy
Women - Irregular menses, Amenorrhea
iv) Haemorrhagic Tendency → Purpura, Easy Bruising, Epistaxis
v) Spider Naevi, Palmar Erythema,
vi) Anemia, Infection, Bleeding
vii) Ascites, viii) Others → Pigmentation, Dupuytren's Contracture

→ Liver Biopsy → Gold standard.
→ ↑ Elevated Bilirubin.
↑ Liver Enzymes.
→ Aspartate Aminotransferase (AST)
→ Alanine Aminotransferase (ALT)
→ Alkaline Phosphatase (ALP)
→ Gamma Glutamyl Transpeptidase (GGT)
→ ↓ Low albumin
→ ↑ Prolonged Prothrombin Time.
→ Portal Venous Pressure measurement.

Prognosis

- 5 to 10 years.