CIRRHOSIS OF LIVER

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Surat
Cirrhosis

- Chronic generalized liver disease
- Histopathologically
- Has a variety of clinical manifestations and complications
- Some of which can be life threatening.

- Pathologic features:
- Fibrosis
- Architectural distortion with formation of nodules
  (micronodular / macronodular)
- This results in decrease in hepatocellular mass, thus function.
Micronodular Cirrhosis
Macronodular Cirrhosis
Epidemiology

• 40% cases asymptomatic

• Deaths due to liver cancer secondary to cirrhosis
This end stage of Chronic Liver Disease is characterised by:

- Bridging Fibrous Septa
- Parenchymal nodules
- Disruption of the architecture of the entire liver
Pathogenesis

- Hepatocellular death
- Regeneration
- Progressive fibrosis

- Fibrosis due to formation of increased amounts of
  - collagen
  - extracellular matrix.

- Stimuli:
  - 1. Chronic inflammation = cytokines like TNF, IL-1
  - 2. Cytokine = injured endothelial cells, hepatocytes
Etiology

• Alcoholism
• Chronic Viral Hepatitis
  – Hepatitis B
  – Hepatitis C
• Autoimmune Hepatitis
• Biliary Cirrhosis
  – Primary biliary cirrhosis
  – Primary sclerosing cholangitis
  – Autoimmune cholangiopathy
Etiology

- Cardiac Cirrhosis
- Budd Chiari Syndrome
- Inherited metabolic liver disease:
  - Hemochromatosis
  - Wilson’s Disease
  - Alpha 1 Antitrypsin deficiency
  - Cystic Fibrosis
- Drug induced: Methotrexate, Immunosuppressant
- Syphilis
Clinical Features

• Asymptomatic for long periods.
• Non specific symptoms –
  – Vague right upper quadrant pain
  – Nausea
  – Vomiting
  – Diarrhea
  – Anorexia & Malaise.
• Specific complication of Chronic Liver Disease
  • Ascites
  • Upper GI bleed
  • Malena
• Hepato Renal Syndrome
Signs

- Edema
- Ascites
- Splenomegaly
- Caput medusae
- Spider Naevi
- Flapping tremors
- Icterus
- Pallor
- Bleeding tendencies
- Gynecomastia
- Loss of hair (alopecia)
- Loss of axillary & pubic hair
- Wasting of muscles
- Glossitis
- Palmar erythema
- Clubbing
- Hyperpigmentation
- Testicular atrophy
- Delirium
Biochemical explanation of Edema, Ascites, Hypotension in Chronic alcoholic
filtration pressure = hydrostatic pressure - oncotic pressure

filtration at arteriolar end

reabsorption at venular end

arteriolar end

hydrostatic pressure 35mm Hg

oncotic pressure 25mm Hg

venular end

hydrostatic pressure 15mm Hg
Palmar erythema
Investigation

- Haemoglobin – Decrease
- Platelet count - Low
- Peripheral smear
  - Microcytic / Macrocytic RBC
  - Hypochronic RBC
  - Thrombocytopenia
- Serum Bilirubin – normal / elevated
- Prothrombin Time – often prolonged
- Serum Alanine Transaminases – elevated
- Serum Aspartate Transaminase - elevated
- Serum Protein
- Serum Albumin
- Prothrombin time
- Liver biopsy
Investigation

• Serology for Hepatitis Virus
  – Anti HBsAg Antibody
  – Anti HCsAg Antibody
• Autoantibody
  – Anti Nuclear Antibody
  – Anti Mitochondrial Antibody
• Ferritin and Transferritin Saturation
• Cholesterol
• Glucose
• Alpha 1 Anti – trypsin
• Histopathology = Liver Biopsy
• Image Study
• Ascitic fluid Examination
Cirrhosis – other causes

- Cardiac cirrhosis
- Hemochromatosis
- Wilson’s Disease
- Alpha1 Antitrypsin Deficiency
- Cystic Fibrosis
Complications of Cirrhosis

- Portal Hypertension
  - Gastroesophageal Varice
  - Splenomegaly
  - Ascites
  - Haemarroids
- Hepato-Renal Syndrome
- Hepatic Encephalopathy
- Coagulopathy
- Bone Disease: Osteopenia/Osteoporosis/Osteomalacia
- Haematological abnormality
  - Anaemia
  - Hemolysis
Management of Cirrhosis

• Rest
• Ascites
  – Sodium & Fluid restriction
  – Diuretics,
  – Paracentesis
  – Peritoneovenous shunt
    • Continuous reinfusion of ascitic fluid into the venous system
• Nutrition
  – High calcium
  – High Cholesterol
  – Moderate to Low fat
  – Low protein if patient is symptomatic
Management - Drugs

• Fat & Water soluble vitamins
• Hemostasis – Vasopressin
• ↓ portal venous pressure – Propranolol
• Acidify stool, trap ammonia – Lactulose
• ↓ bacterial flora – Neomycin sulfate
• ↓ gastric acidity – Proton Pump Inhibitor
• Diuretics – Spironolactone, Furosemide
• Correct clotting abnormalities – Vitamin K
Portal Hypertension - Cause

*Elevation of hepatic venous pressure > 5mm Hg.*

- **Pre-Hepatic**
  - Portal Vein thrombosis
  - Splenic Vein Thrombosis
  - Massive Splenomegaly

- **Hepatic**
  - Hepatic fibrosis
  - Sinusoidal – Cirrhosis
  - Alcoholic hepatitis

- **Post-Hepatic**
  - Veno-occlusive Disease
Portal Hypertension - Cause

• Post-hepatic
  – Budd Chiari syndrome
  – Inferior vena caval webs
  – Cardiac Causes
    • Restrictive Cardiomyopathy
    • Constrictive Pericarditis
    • Severe Congestive Heart Failure
Treatment of Portal HT

- Nasal Gastric Aspiration
- OCTREOTIDE
- VASOPRESSIN
- Endoscopic Therapy
- Variceal band ligation
- Variceal sclerotherapy
- Balloon tamponade
- Beta blockers – propranolol
Ascites - Treatment

• **Mild**
  – Dietary sodium restriction ( <2g/day )

• **Moderate**
  – Diuretic is essential
  – Spironolactone 100-200 mg/day
  – Furosemide 40-80 mg/day

• **Severe**
  – Ascites Tapping
  – Liver Transplantation

✓ Prognosis – Patients of cirrhosis with ascites is poor
✓ <50 % of Patients survive 2 yrs after the onset of ascites.
HEPATIC ENCEPHALOPATHY

• Precipitating factors
  – GI Bleeding
  – Excess protein intake
  – Electrolyte abnormalities
  – Ascitic Aspiration
  – Uremia
  – Dehydration, Constipation
  – Alcohol
  – Viral infections
  – Anaesthetic agents, Surgery, Narcotics, Tranquilisers
  – Hepatic toxins
HEPATIC ENCEPHALOPATHY

• Treatment—CORRECT/ AVOID PRECIPITATING FACTORS
  – Dietary protein restriction-30 - 40 gm protein / day
  – Non absorbable disaccharide – LACTULOSE – 15 to 45 ml BID / QID
  – Lactulose enema
  – Neomycin 1 gm 6\textsuperscript{th} hrly
  – Metronidazole 250 mg 8\textsuperscript{th} hrly
  – Bowel wash / Lactobacillus
THANK YOU