

Portal hypertension

Learning out comes

- **LO1: Definition of portal hypertension(PHT)**
- **LO2: Pathophysiology of portal hypertension**
- **LO3: Classification and of portal hypertension**
- **LO4: Causes and clinical features of each type of portal hypertension**
- **LO5: Diagnosis of portal hypertension**
- **LO6: Treatment of portal hypertension**

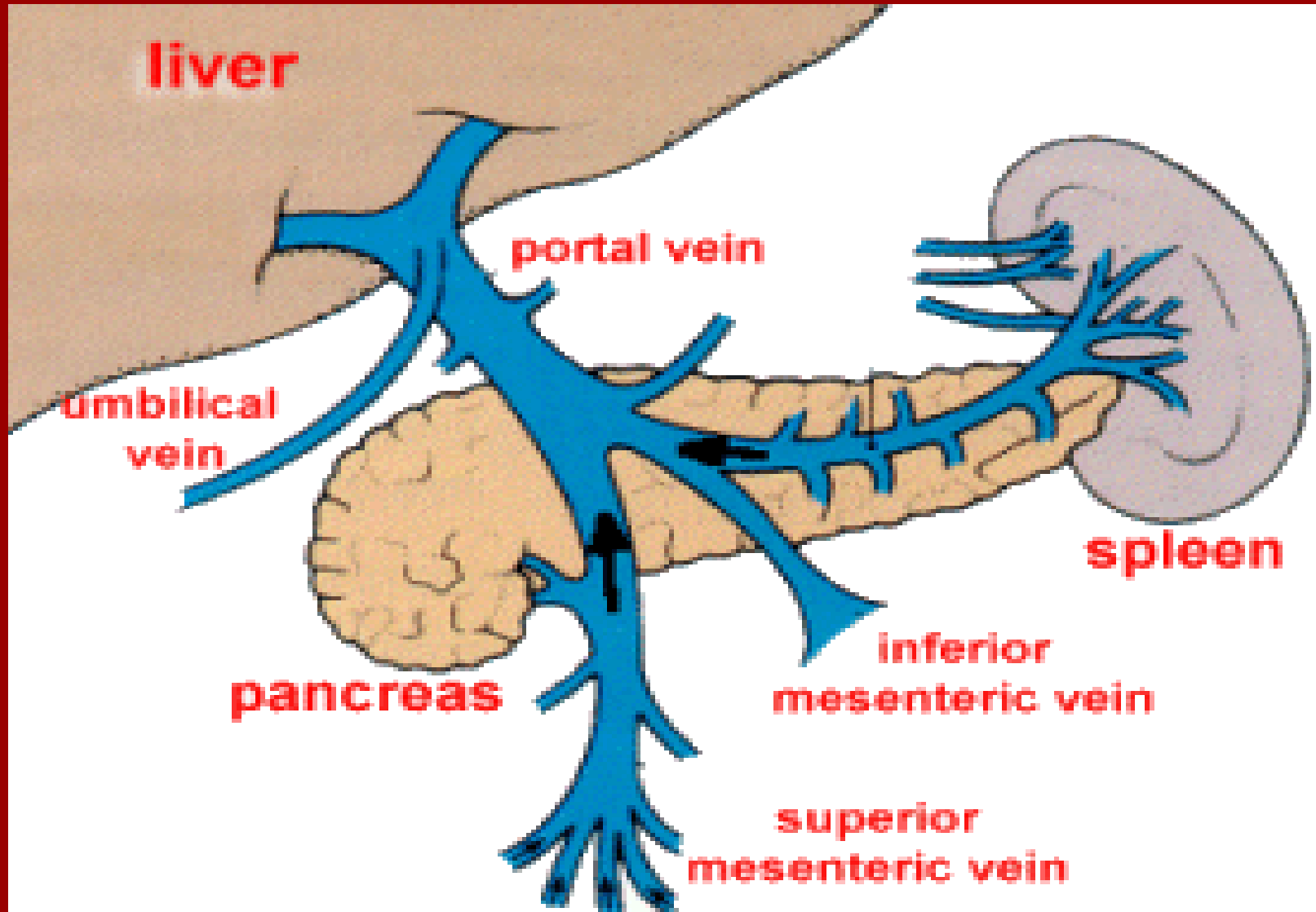
LO1: Definition

- An elevation of portal pressure above 10-12 mm Hg
- or 30 cm of saline
- or intrasplenic pressure >17 mm Hg
- or wedged hepatic venous pressure more than 4 mm Hg above inferior vena caval pressure.

L02: Pathophysiology

- Portal system includes all veins, which carry blood from digestive tract, spleen pancreas and gall bladder to liver via portal vein
- Portal vein is formed by the union of superior mesenteric vein and splenic vein just posterior to neck of pancreas at level of L₂

LO2: Portal venous System



LO3: Classification of PHT

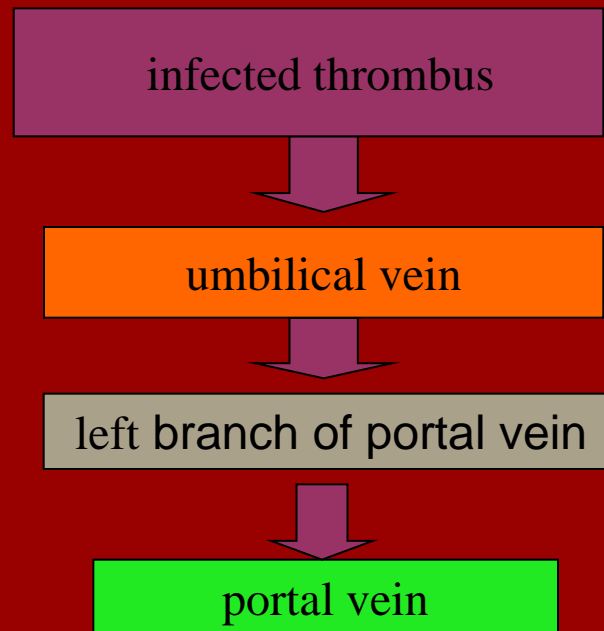
- 1. Pre hepatic PTH**
- 2. Intra hepatic PTH**
 - a) Pre sinusoidal
 - b) Sinusoidal
 - c) Post sinusoidal
- 3. Post-hepatic PTH**

LO4: PRE HEPATIC PHT

- Block in portal vein occurs before the blood reaches the liver.
- Patients usually present with upper GIT bleeding
- Normal liver function and, prognosis excellent.

LO4: Causes of pre hepatic PHT

1. Developmental defects-Portal vein agenesis, atresia, stenosis
2. umbilical sepsis-this is most important cause in developing countries



LO4: Causes of pre hepatic PHT

3. Trauma

4. Portal vein thrombosis

5. Intra-abdominal infections-like acute appendicitis and primary peritonitis and pancreatitis.

6. Idiopathic - in 50 % OF children with pre hepatic PTH aetiology can not be found out.

LO4: Clinical feature of pre hepatic PHT

UPPER GIT BLEED-

Due to ruptured oesophageal varices

Manifestation of upper GI bleed

- hematemesis
- melena

LO4: General examination of pre hepatic PHT

- Pallor
- Splenomegaly
- No jaundice
- No hepatomegaly
- No ascites

LO4: Types Intra Hepatic PTH

1. pre sinusoidal
 2. sinusoidal
 3. post sinusoidal
- The liver functions are usually normal in pre sinusoidal ,where they are dearranged in sinusoidal and post sinusoidal.

LO4: Causes of pre sinusoidal PTH

1. Chronic hepatitis
2. Congenital hepatic fibrosis
3. Chronic myeloid leukaemia
4. Sarcoidosis
5. Primary biliary cholangitis
6. Schistosomiasis

LO4: Causes and clinical features of sinusoidal PTH

❖ This is caused by cirrhosis due to:

1. Hepatitis B and C ,
2. Metabolic disorders like Wilson's disease,
3. Cholestasis drugs like INH, methotrexate.

❖ Feature-1. upper GIT bleed

2. splenomegaly

3. jaundice

4. ascites

5. hepatic encephalopathy

6. caput medusa

7. hepatomegaly

LO4: Causes of post sinusoidal PHT (veno-occlusive disease)

- This is non thrombotic occlusion of terminal hepatic venous radicles without associated abnormality of hepatic vein or inferior vena cava.

AETIOLOGY-

- Toxins like aflatoxins
- Drugs like 6-mercaptopurine, cyclophosphamide, vincristine
- Hypervitaminosis A.

LO4: Causes of post sinusoidal PHTPOST HEPATIC PTH (Budd- chiari syndrome)

➤ Thrombosis of hepatic vein

➤ Aetiology-

Thrombosis complicating-

1.abdominal trauma

2.polycythemia rubra vera

3.neoplasms

4.S.L.E

5.cirrhosis

6.sickle cell anaemia

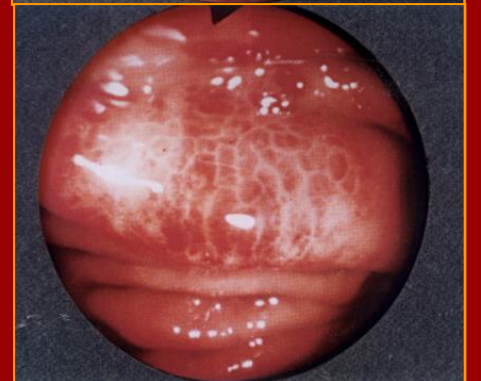
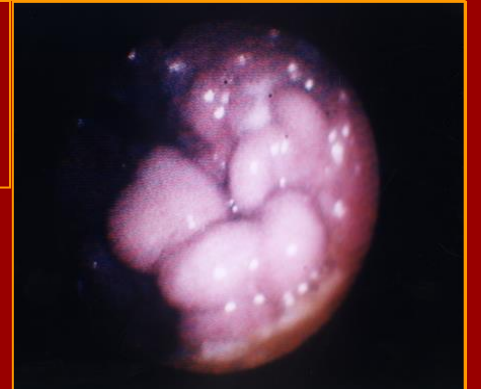
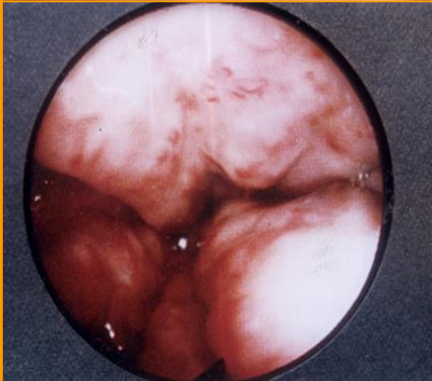
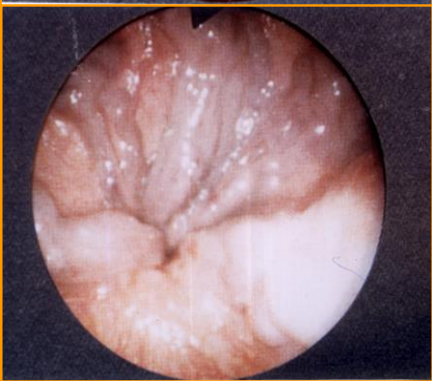
LO4: Budd- chiari syndrome

- **Acute budd chiari syndrome-**
 1. severe abdominal pain with vomiting
 2. mild jaundice
 3. ascites

- **Chronic budd chiari syndrome**
 1. massive ascites
 2. hepatomegaly
 3. upper GI bleed

L05: Diagnosis

- CBC
- LFT-dearanged in sinusoidal, post sinusoidal and post hepatic portal hypertension. normal in pre sinusoidal and pre hepatic PHT..
- U/S
 - Color Doppler-assess the blood flow within the portal vein
 - portal vein diameter >17mm
- Upper endoscopy (OGD) :Demonstration of
 1. Esophageal varices
 2. Gastric varices



LO6: Treatment of PHT

Primary prophylaxis

Propranolol- dose -:1-2 mg /kg/day

L06: Pharmacological therapy

- 1) Vasopressin: 0.33 u/kg in 20 min than iv infusion of 0.33U/kg/hr
- 2) Octreotide: administered by continuous intravenous infusion of 1.0-5.0 $\mu\text{g}/\text{kg}/\text{hr}$
- 3) H2 blocker/PPI
- 4) I.V. Vit k

LO6: Management of Ascites

- In 80% of cases ,ascites is caused by cirrhosis
- in portal hypertension transudate ascites occur.
- Serum -Ascites Albumin Gradient (SAAG) is useful for distinguishing ascites caused by portal hypertension from non-portal hypertension ascites.
- $SAAG = (\text{ascites albumin} - \text{serum albumin})$.
- $SAAG > 1.1 \text{ g/dl}$:- presence of portal hypertension.

LO6: Management of Ascites

1) Bed rest :

Upright posture activates sodium retaining mechanisms impairs renal perfusion and sodium excretion.

2) Sodium restriction :

Restricting oral intake of salt 2 g/day.

3) Water restriction

4) Diuretics:

potassium -sparing diuretics is considered the diuretic of choice in portal hypertension.

(Spironolactone)

loop diuretics (Furosemide)