PORTAL HYPERTENSION

Def: Elevated pressure in the portal system > 10-12mmHg

Aetiology:

1. **Pre-hepatic: portal vein obstruction** eg porta hepatis nodes, tumours, PV thrombosis,
2. **Hepatic** (a)Pre-sinusoid
   (b)Sinusoidal: Hep B, HepC, PBC, PSC, chronic active hepatitis, haemochromatosis, Wilson's, cytotoxics
   (c)Post-sinusoidal: cirrhosis, non-cirrhotics
3. **Post-hepatic: increased resistance to outflow** eg B-C, IVC webs and thrombosis, Pul HTN, RHF, TReg, AVF

Pathogenesis

(i)Portosystemic anastomoses when **HVPG 10-12mmHg**; absent of valves permits **hepatofugal flow**
GOJ, gastric, caput medusae, rectum, retroperitoneum, left renal vein, diaphragm (veins draining bare area)
(ii)Ascites:
(iii)Encephalopathy:

Clinical Features

Ascites
Encephalopathy
Variceal bleeding: only when HVPG>12mmHg
Hypersplenism

Investigations

1. Identify cause
2. USS liver: portal flow, spleen, varices, liver parenchyma

Management

Indications: (i)complications (ii)risk/occurrence of variceal bleeding
Aims: (i)HVPG< 12 may lead to resolution of varices (ii)20% reduction protective

1. **Non-selective B-Blockade**
2. **TIPSS** (transjugular intrahepatic portosystemic shunt): varices/refractory ascites/PH gastropathy/hepatorenal syn/Budd-Chiari **not enceph!**
3. **Surgical shunt:** non-cirrhotics failing medical therapy → distal splenorenal/portocaval depending on PV patency
4. **Liver transplant:** underlying liver disease esp cirrhotics (TIPSS first)

VARICES

Def:

Natural history: (i)Develop at **10-12**mmHg (ii)bleed >**12**mmHg

1. OESOPAGHEAL: (i)0=absent (ii) 1=collapse on insufflation (iii)2=between 1+2 (iii)3=occlude lumen

2. GASTRIC: (a)extending across GOJ= (i)GOV1 >5cm (ii)GOV2 into fundus

(b)isolated= (i)IGV1 isolated in fundus (ii)IGV2 isolated, not in fundus

PRIMARY PROPHYLAXIS

(i)Screen all cirrhotics at diagnosis/decompensation

(ii)Measure HVPG baseline before treatment

OESOPHAGEAL

Aim of therapy: (i)HVPG < 12mmHg (ii)20% reduction from baseline

Surveillance: (i)G0 2-3yrly (ii)G1 12mthly+ don't treat (iii)G2/3 treat as below

1. **NSBB** **(first line)**: titrate to max tolerance/HR 50-55 (PROPRANOLOL; CARVEDILOL also a1 blocker; NADOLOL)

Propranolol reduces risk of bleeding from 25% to 15% in GII/III; no evidence for G1

2. **VARICEAL BAND LIGATION (VBL)**: if BB not tolerated/contraindicated; only GII/III

GASTRIC

GOV2: NSBB if high risk (don't inject)

VARICEAL HAEMORRHAGE

Predictors: (i)severity of liver dysfunction/rapidity of decompensation (ii)grade of varices (iii)intravariceal pressure

1. RESUSCITATION:

Protect airway

Transfuse to Hb 7-8; plts if<50)/terlipressin$_{\text{constrict splanchnics to reduce portal inflow}}$/somatostatin **continue 5d post/until bleeding stops**

Antibiotics (norfloxacin/ciprofloxacin)

2. OGD: (i)unstable: immediately (ii)stable: within 24hrs

(a)**Oesophageals**: VBLx2 (i)control → 2^{o} prevention (ii)uncontrolled → Sengstaken-Blakemore then TIPSS or Surgery

(b)**Gastric:** GOV1=as for oesophageal; GOV1/IGV1/IGV2= **cyanoacrylate**

3. REBLEED

Risk factors: (i)active bleed (ii)HVPG>20mmHg (iii)hypoalbuminaemia (iv)renal failure (v)gastric varices

Manifest in first 5 days; 50% rebleed by 10 days

Management: Oesophageal = OGD + VBL/TIPSS/Surgery ||Gastric= balloon then TIPSS

SECONDARY PREVENTION

OESOPHAGEAL (rebleed 30-50% @2yrs)

NSBB + VBL combo; 2-4wkly until eradicated;

OGD: 3mths then 6mthly

Recurrent: TIPS/shunt$_{\text{(ChildA/B if TIPSS not feasible)}}$/transplant

GASTRIC

GOV1: VBL

GOV2: cyanoacrylate +/- thrombin → TIPSS if rebleed