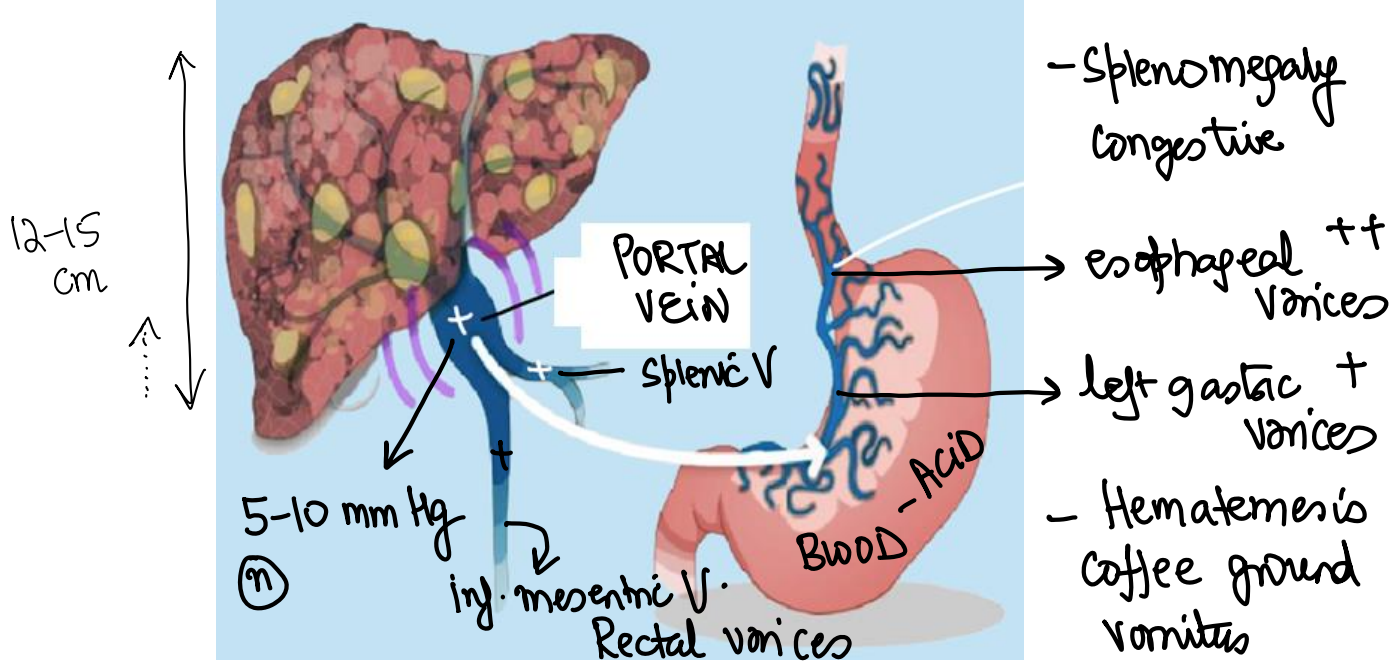


Cirrhosis and Portal Hypertension



Nursing Priority Actions & Management

↓
CIRRHOSIS of LIVER



Hepatic venous pressure gradient: 5 mm Hg

Diffuse destruction of hepatocytes followed by Fibrosis causes by stellate cells =

Causes: NAHL

- N: Non-alcoholic fatty liver disease
- A: Alcoholic cirrhosis
- H: Hepatitis viral [HBV, HCV, HDV]
- H: Hemochromatosis
- I: WILSON disease: Cu^{++}
Hepatolenticular degeneration

↓
M.A.S.H dysfunction
Metabolic associated
steato-hepatitis

Portal HTN


- or
- * PV > 10 mm Hg
 - * HVPG > 5 mm Hg

→ Flapping TREMORS: CO_2 NARCOSIS,
HYPERIC encephalopathy

Features of liver cell failure

$\text{NH}_3 \uparrow$ intoxication

Uremic encephalopathy
Hepatic encephalopathy

CNS	Asterixis, paresthesia, alteration of sleep pattern ← earliest
Oral cavity	Fetor hepaticus Toxins + NAevi
Neck	Spider angioma →  dilated arterioles, SVC distribution, <u>estrogen</u> ↑
Chest Abdomen	CAPUT MEDUSAE : Umbilicus
Hands	Palmar erythema
Genitals	Testis atrophy GYNAECOMASTIA
Endocrine	Aldosterone increased → ADH increased → + Estrogen increased ↓ Testosterone reduced Ascites : shifting dullness fluid Thrill ++
Kidney	Hepato-Renal syndrome : oliguria



Complications of Cirrhosis: PACE_BLEED

P: Portal Hypertension

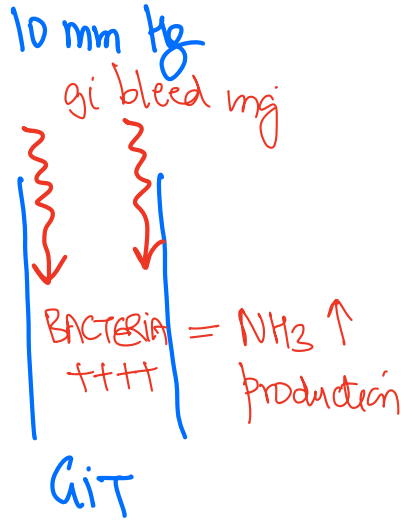
A: Ascites

C: Caput medusae

E: Encephalopathy, Esophageal varices

B: Bleeding due to lack of clotting factors

HVPA $> 5 \text{ mm Hg}$, PV $> 10 \text{ mm Hg}$
FREE fluid in peritoneal cavity



Normal liver span = 12-15 cm
CIRRHOSIS / CLD: span ↓

Portal Hypertension cut off: HVPA $> 5 \text{ mm Hg}$

Nursing interventions

1. Elevate head end \downarrow Aspiration Risk \rightarrow 1gm/kg/day
2. Normal protein in diet. High protein cannot be given in cause of \checkmark encephalopathy or ascites \rightarrow NH₂ load \uparrow
3. Provide vitamins **ADEK**, folic acid and thiamine
4. Restrict **salt** intake \rightarrow BERI-BERI
DNA synthesis
Salt free diet
.....
5. Input output monitoring
6. Drugs for ascites (compliance)
 - A. Eplerenone
 - B. Furosemide, Amiloride
7. Electrolytes monitoring.
K \downarrow

Spirolectone
Estrogen ++
Receptor
gynaecomastia



8. Enteral feeds > TPN

Careful with insertion of NG tube when Varices are present
Thin-wall veins

9. Management of esophageal varices

↳ ENDOSCOPIC VARICEAL ligation

10. Management of bleeding in esophageal variceal rupture

- MASSIVE TRANSFUSION : 6U PRBC : 6U FFP : 6U PRP [1:1:1]
- OCTREOTIDE or TERLIPRESSIN

12. PPI

PANTOPRAZOLE : EROSIVE GASTRITIS : ↓

13. Lactulose, Rifaximin, Neomycin → BACTERIOSTATIC Antibiotics

↓
diarrhea
↓ BACTERIA in gut : ↓ ammonia production

↓ count of BACTERIA
↓ NH₃ production

P.P.H

31: LINTON

PORTS
1 2 3

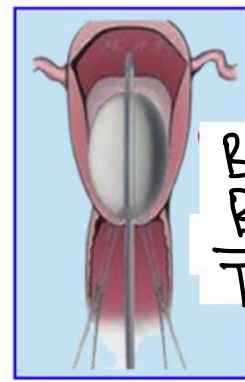
32: BLACKMORE

PORTS
1 2 3

1 2 3 4

TAMPONA DE effect

42
Minnesota Tube



BAKRI BALLOON
Tamponade

Triggers of bleed
vomiting, cough, food bolus, alcoholic binge

Portal vein → left gastric vein → esophageal submucosal veins at GE junction → esophageal veins

aim: still Asules ++

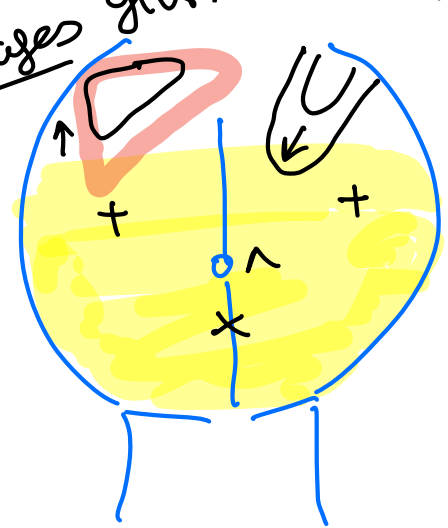
↓
Refractory ascites :

1. PARACENTESIS
(abdominal) +

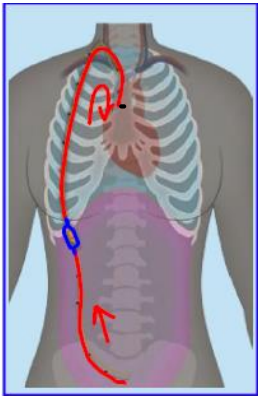
SPIRINOLACTONE
FUROSEMIDE
AMILORIDE

max dosages

+ salt free albumin



✓
2. Peritoneo-venous shunting/ Le Veen shunting

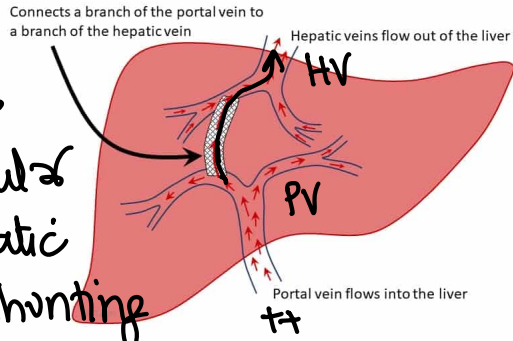


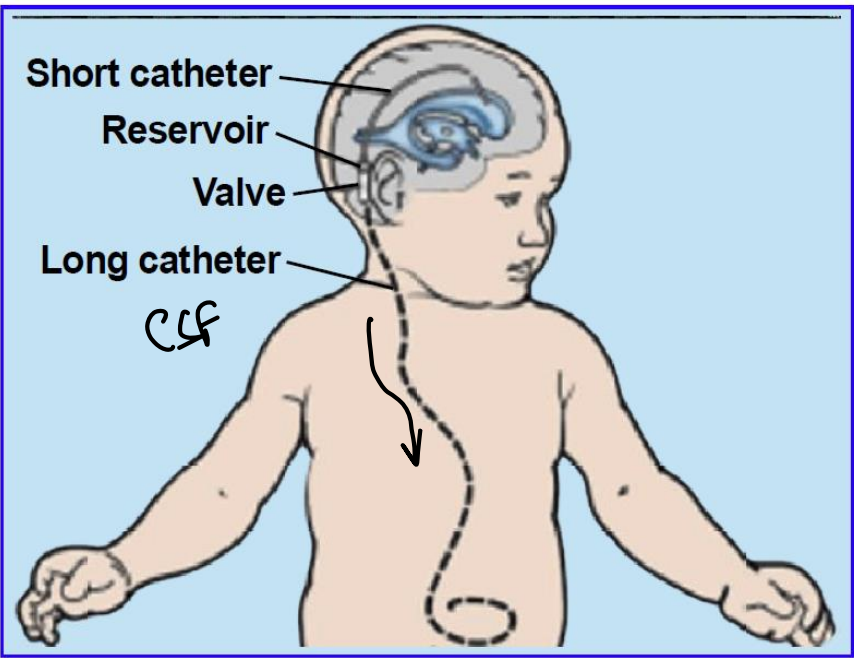
3.

T.I.P.S

Trans-jugular
intra-hepatic

Porto-systemic shunting





HYDROCEPHALUS

VENTRICO-
PERITONEAL
SHUNT (CSF)