Management of Cirrhosis

Hepatic Encephalopathy

- Important causes: GI bleed, infection (SBP, UTI), hypokalemia, hypoglycemia, hypovolemia, use of sedatives etc
- Treatment: Lactulose (PO/PR inpatient) needs to be titrated to 2-3 BM/day, Rifaximin added to lactulose if needed. Neomycin is 2nd line and is associated with nephrotoxicity/ototoxicity

Hepatopulmonary syndrome/Portopulmonary hypertension

- HPS is due to pulmonary capillary *vasodilation* whereas PPHtn is pulmonary artery hypertension
- HPS: evaluate with ABG, TTE w/ bubble study
- PPHtn: mean PAP>25

Esophageal Varices

- All patients need a screening EGD, repeat q3years of no varices, q1-2years if small varices
- EGD if evidence of decompensated cirrhosis, repeat annually
- Primary ppx (non-selective BB): Child B or C, medium/large varices, small varices w/ red wale

Ascites/SBP

- EtOH use, sodium restriction <2gm/day, fluid restriction not necessary unless Na<125
- Combination diuretic therapy (typical Aldactone 100mg and Lasix 40mg, lower dose as needed)
- Large volume paracenteses: give 6-8gm of albumin for every liter removed over 5-6L (if 8L removed, should give ~18g of albumin)
- Ascitic fluid analysis:
    - SAAG >1.1 indicates CHF or cirrhosis
        - Total protein >2.5 indicates heart failure, budd chiari
        - Total protein <2.5 indicates cirrhosis
    - SAAG <1.1 indicates nephrotic syndrome, Tb, malignancy
        - Total protein >2.5 indicates malignancy, Tb
        - Total protein <2.5 indicates nephrotic syndrome
- SBP: Diagnosed based on ascitic fluid PMN>250
    - Correcting for a bloody para:
        - subtract 1 WBC for every 750 RBCs
        - subtract 1 PMN for every 250 RBCs
    - DC beta blocker, associated with increased mortality
    - Give **albumin** (1.5gm/kg D1 and 1gm/kg D3) if: Cr>1, BUN>30 or Tbili>4
- SBP ppx: indicated for GI bleed, history of SBP
    - Ascites total protein <1.5 **and** Cr≥1.2, BUN≥25, Na ≤130, Childs≥9, or Tbili≥3

Hepatorenal syndrome

- Type 1: Cr doubles to >2.5 over less than 2 weeks
- Type 2: Less severe renal impairment, associated with diuretic resistant ascites
- Diagnosis of exclusion, need to rule out other causes of renal injury
    - Treatment: Albumin 1gm/kg/day x 2 days followed by 25-50gm/day (until Midrodrine/Octreotide d/c-ed), Midodrine 7.5mg TID, Octreotide 100-200mcg SC TID
        - Albumin + Norepinephrine in ICU patient

Health Maintenance

- Vaccines: Hepatitis A/B (if non-immune), PPSV23, Influenza, Zoster>60yo
- Avoid NSAIDs, raw/undercooked shellfish, Acetaminophen <2gm
- HCC Screening: Abdominal US q6months, addition of AFP is optional
    - HBV without cirrhosis: screen for HCC if +FH, Asian male>40 female>50, African/African americans