- Encephalopathy
  - due to decreased clearance of ammonia
  - managed with *Lactulose*
- Splenomegaly which leads to low platelets
  - we only give transfusion of platelets if there is bleeding with lower than 50,000 platelets
- Liver cirrhosis is a chronic disease that is usually associated with normal to moderately elevated aminotransferase levels and impaired hepatic synthetic function

***all biliary obstructions can cause an elevated ALP and GGT

Causes:

- Primary Sclerosing Cholangitis
  - has high ALP + jaundice + IBD
  - it is the only cause of cirrhosis that is not accurately diagnosed with biopsy
  - we need ERCP (endoscopic retrograde cholangiopancreatography) looks for torsions and beading
- Primary Biliary Cirrhosis
  - autoimmune disease against bile ducts
  - usually presents as an itchy middle aged female with elevated ALP
  - Ultrasound, CT, hepatitis tests all are negative so we have to then test Anti mitochondrial antibodies

both of these diseases are treated by *Cholestyramine* or *Ursodeoxycolic acid* (bile acid binding resins and inhibitors

- Alpha 1 anti trypsin deficiency:
  - we get the level of alpha 1 antitrypsin
  - this disease has a specific symptom:
    - Lung disease! (young non smoker emphysema)
  - treat with replacement of the enzyme
- Wilsons
  - low cerulopaslmin
  - Kaiser rings in the eyes bas only visible with slit lamp
  - movement problems with psychosis
  - treat with *penicillamine*
- Hemochromatosis
  - high Iron
  - high Ferritin
  - low TIBC
  - hits the
    - heart this will cause restrictive cardiomyopathy
    - joints cause arthralgias