• 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 biliary 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 mitochondria 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

• **Wilson’s**
  ○ low ceruloplasmin
  ○ 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