Foundations Frameworks

Approach to Jaundice

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Chronic Jaundice

- Chronic liver failure/cirrhosis: irreversible fibrotic scarring of the liver
  - Diagnoses specific to cirrhosis for which to evaluate:
    - Spontaneous bacterial peritonitis: translocation of normal bacterial flora (typically enterobacter) across bowel wall
      - Fever/abdominal pain/AMS
      - 15% are asymptomatic
      - ANC of > 250 or bacteria present on gram stain
      - Treatment: 3rd generation cephalosporin
    - Hepatic encephalopathy
      - Elevated ammonia
      - Treatment: lactulose
    - GI bleed/variceal bleed: evaluate for history of esophageal bleeds
      - Consider octreotide and 3rd generation cephalosporin
      - Consider repleting fibrinogen/vitamin K
      - Transfuse pRBCs, platelets, FFP as needed to correct anemia, coagulopathy
    - Hepatorenal syndrome: acute renal failure in setting of cirrhosis
      - Often associated with SBP
      - Very poor prognosis

Acute Jaundice

- Hemolysis: evaluate as possible etiology of jaundice
  - Unconjugated hyperbilirubinemia, elevated LDH, schistocytes, decreased haptoglobin
  - Differential: HUS/TTP, DIC, HELLP, MAHA, transfusion hemolysis
- Obstructive: typically presents with elevated alk phos and LFTs, obtain RUQ US or CT A/P
  - Neoplasm, stricture, gallstone
  - Gallstone
    - Infected: cholecystitis, ascending cholangitis
      - Fever, elevated WBC, + murphy's -> hypotension, AMS
      - US with peri-cholecystic fluid, gallbladder wall thickening
      - Antibiotics, surgery consult
    - Non-infected: choledocholithiasis, gallstone pancreatitis
      - ERCP
- Hepatocellular Disease
  - Toxin/Drug
    - Consider acetaminophen level, especially if LFTs in the 1000s
    - Complete medication reconciliation, numerous meds cause liver toxicity
    - Mushrooms: Crotinarius, Gyromitra, Amanita
  - Viral Hepatitis: typically ALT > AST, send viral hepatitis panel

- Hepatitis A: foodborne, rarely leads to cirrhosis/death, presents with N/V, malaise, fever, abd pain
- Hepatitis B: N/V, malaise, fever, abdominal pain
- Hepatitis C: 75% progress to chronic hepatitis C, may lead to cirrhosis, asymptomatic in acute phase
- Viral studies
    - Hepatitis B
        - HBsAg: + implies infection
        - Anti-HBs: implies clearance or vaccination
        - Anti-HBc: implies prior infection; IgM = acute & in flares; only marker in window period; IgG always present
        - HBe-Ag: implies active viral replication & infectivity
        - Anti-HBe: low infectivity
    - Hepatitis C
        - HCV: Active disease identified by reactive HCV ab and +HCV RNA

- ETOH
    - AST > ALT, typically 2 times greater
    - May have concomitant macrocytic anemia, thrombocytopenia

LFTs Pearls

- Extreme elevations: > 3000 U/L or > 40x upper limit – consistent with acetaminophen OD or shock liver
- Moderate elevation: 10-40x above upper limit – consistent with viral hepatitis
- Mild elevations: < 10x upper limit – consistent with EToH hepatitis
- Young woman: check pregnancy status and R/O HELLP

References:

- Adams, J et al. Emergency Medicine: Clinical Essentials, Second Edition. Liver Disorders, pp. 347-355. 2013.
- Prutkin, JM. Acute liver failure in adults: etiology, clinical manifestations, and diagnosis. Last updated: Aug 12, 2015. Uptodate.com