GHAPP
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Workup of Elevated Liver Enzymes

Jeremy Davis ACNP-BC
Gastrointestinal Specialists AMC
Shreveport, LA
Disclosures

Jeremy Davis ACNP-BC
No financial relationships to disclose.
PATIENT HISTORY

- 50 y.o. CF presents to clinic in 2013
- Breast CA s/p mastectomy, chemo and radiation (2010)
- Incidental hepatic steatosis on u/s
- Elevated AP, AST and ALT
- BMI 36, GERD, HTN, low HDL
- No social risks, blood transfusions, or FH liver dx
Diagnostic Studies

- CBC, CMP, PT/INR
- Anti-mitochondrial Ab
- ANA
- ASMA
- Ferritin, TIBC, iron sat
- Hepatitis A, B, C
- Fibrosis evaluation
  - Fibroscan
  - Liver biopsy
- What other tests?
Differential Diagnosis

- NASH
- Primary Billiary Cholangitis (PBC)
- Primary Sclerosing Cholangitis (PSC)
- Hemochromatosis
- Celiac disease
Treatment Options

**PBC**
- Ursodeoxycholic acid 13-15 mg/kg/day
- Obeticholic acid 5 mg/day
- Fibrates

**NASH**
- Weight loss
- Exercise
- Pioglitazone
- Vitamin E 800 IU/day
Patient Follow-Up

• Short-term plan
  – Timing including additional labs, procedures, clinic visits

• Long-term plan
  – Does the patient stay with you? If so, for how long?
  – Do you release back to PCP? If so, at what point?
Case Study

• Patient Profile: 56 y/o Caucasian male w/ DMII, HTN, hyperlipidemia, presented from PCP with reported elevated LFTs and presumed fatty liver from NASH Fibrotest assessment (F1-F2).
• No ETOH, no supplement use, no family hx of liver disease
• Home Meds included: trulicity, atorvastatin, metformin, jardiance, ramipril.
• Which tests/labs should be ordered?
Results of Tests/Labs

- **Results**
  - CBC – normal. INR 1.0, CMP Na 145, Cr 0.76, Tbil 0.4, ALP 150, ALT 149, AST 76, Albumin 3.9, Total Protein 8.7.
  - Ceruloplasmin, acute hep panel, iron studies, A1aT were negative.
  - ANA 1:640, ASMA 1:80, AMA 0.1 (weak positive). GGT 56.
  - Liver US – fatty liver, no hepatic mass or lesion, prior cholecystectomy, mild splenomegaly

- **Differential diagnoses** – NASH/ Autoimmune hepatitis/ PBC/ Drug induced hepatitis?

- Is any further workup necessary?

- What is the diagnosis?
Diagnosis

• Diagnosis: NASH w/ Autoimmune hepatitis.
  – Patient had positive autoimmune markers.
  – Initially patient declined a liver biopsy, therefore fibroscan was ordered – completed, patient finally agreed to liver biopsy, and it showed mild steatosis w/ moderate chronic hepatitis w/ plasma cells and interface activity c/w autoimmune hepatitis, with stage 1 fibrosis.

• Management options available for this patient?
Treatment Options

- Options: Prednisone, Azathioprine, budesonide, can consider mycophenylate, tacrolimus (2nd line)

- Important to check TPMT activity to see how patient will tolerate to azathioprine use prior to initiation of azathioprine therapy.

- In this patient, given he was diabetic, prednisone was not used, TPMT genetics were normal, Azathioprine 50mg daily was started.
Patient Follow-Up

• Patient Care
  
  – Short-term plan
    
    • Initially, followed closely while starting azathioprine, followed at 6 weeks, 12 weeks, then q 6 months x 1 year.
    
    • CBC and CMP were re-assessed at initial follow-up visits.
    
    • Vitamin D level 25-OH was assessed after initial diagnosis-low – therefore required Vit D supplement daily.
  
  – Long-term plan
    
    • Patient has been followed annually w/ hepatology.
    
    • CBC, CMP, Vitamin D 25-OH, IgG annually.
    
    • Pt has remained stable on azathioprine.