San Francisco Hep B Free - Bay Area ECHO Notes
Session 7
April 20, 2021

I. **Didactic Presentation: Hepatitis B Virus and Latent Tuberculosis Co-Infection** (Dr. Robert Wong - Clinical Associate Professor (Affiliated), Division of Gastroenterology and Hepatology, Stanford University School of Medicine and Staff Physician, Gastroenterology and Hepatology Section at VA Palo Alto Healthcare System - presentation can be found at https://www.sfhepbfree.org/echo-program Password: Echo2020

II. Case Presentation: Dr. Ruthann Kwong, Physician at North East Medical Services

Case Summary

- 30-year-old Chinese male, immigrated from Vietnam in 2015, screened positive for HBV as part of free HBV screening clinic 2015, subsequently lost to follow-up.
- Re-presented 4/2021 for physical exam, found to be serum Quantiferon positive, follow-up CXR negative, and HBeAg positive with HBV DNA 145,000,000 IU/mL, ALT 67, plts 185, BMI 25.
- The patient was started on rifampin on 4/15/21 with plan to check CMP in 1 month. Baseline liver ultrasound ordered and plan to consider treatment after LTBI treatment.

Clinical questions:

1. How should I manage a patient with mild ALT elevation, e-antigen positive chronic hepatitis B with a high viral load and LTBI?

Recommendations from Project ECHO panel:

Dr. Anita Chang – Primary Care (Asian Health Services)
Dr. Will Holt - Hepatology (Sutter Health)
Dr. Samuel So – Surgical Oncologist/Founder of Asian Liver Center (Stanford Health)
Dr. Amy Tang – Primary Care (North East Medical Services)
Dr. Frank Trinh – Infectious Disease (San Mateo Medical Center)

HBV and LTBI treatment indications and timing:

- **HBV**: Per guidelines, HBeAg positive patients with persistent HBV DNA elevation (UW guideline recommends >2,000 IU/mL, AASLD recommends >20,000 IU/mL) and ALT elevation (UW recommends >35, AASLD recommends >70) should be started on treatment. Different guidelines have different cutoffs, and both are valid to follow for different patient scenarios.

- Given current labs, the patient has elevated ALT and HBV DNA, and he is likely a candidate for treatment, especially if elevated ALT persists over time (e.g. 3 to 6 months).
- Recommend educating patient about need for regular HBV follow-up and possible need to initiate treatment if ALT remains elevated.
- Recheck HBV DNA and ALT in 3 and 6 months to reassess HBV activity and need for treatment

- **LTBI**: To determine urgency of LTBI treatment, review risk of TB re-activation in next few months
  - Factors that put patient at high risk of TB reactivation include: immunosuppression, recent exposure, recent conversion, CXR findings of fibrosis or scarring.
  - Dr. Chitnis also shared that risk of TB reactivation for non-US born is 0.088 per 100 person-years, and for Vietnamese slightly higher at 0.183 per 100 person years. Non-U.S.-born persons in U.S. < 10 years had higher rate of reactivation compared to those in U.S. > 10 years (0.269 per 100-person years vs. 0.044 per 100 person-years) – data from NHANES and TB surveillance data by Rachel Yelk Woodruff in J. Immigrant Minority Health published 2020.
  - If patient meets criteria for treatment of both HBV & LTBI, then consider starting HBV meds first, or at same time as LTBI treatment.
  - HBV antivirals may reduce risk of drug-induced liver injury (DILI) when treatment is for active TB dz, but risk of DILI is unclear when treating LTBI with rifampin alone. A recent study (Grace Liu et al. Clinical Infectious Diseases. 2020;70(4):660-666) showed increased risk of hospitalization due to drug-induced liver injury if not on antiviral therapy when placed on treatment for active TB disease.

<u>Choice of treatment and monitoring:</u>

- LTBI: Agree with choice of rifampin x 4 month (vs. INH based regiments) to minimize liver toxicity in a patient with chronic hepatitis B.
  - Agree with follow-up ALT in 1 mo/4 weeks
- HBV: If decision is made to start HBV treatment while patient is on rifampin, recommend either TDF or entecavir given drug-drug interaction (category X) between rifampin and TAF, as concurrent use can increase clearance of TAF. If initiating medications, remember the following:
  - For entecavir, make sure patient has not been on lamivudine in the past since past lamivudine treatment can result in entecavir resistance.
  - Discuss with patient the plan for long-term treatment and risk of post-treatment flare if he prematurely stops his medication. HBV DNA should be checked every 3 months until undetectable, then every 6 months with HBeAg/anti-HBe to monitor for HBe seroconversion. After HBe seroconversion, treatment can be discontinued if patient remains HBeAg neg/anti-HBe pos with undetectable HBV DNA and normal ALT for at least 1 year (consolidation period) – assuming no family history of HCC or fibrosis stage >/= 2.