

### Question 14 – November 30

A 55 year old female with a past medical history of hypothyroidism presents to clinic with 1 year of fatigue and pruritus. Exam is unremarkable. Laboratory studies demonstrate an ALT 58 U/L, AST 62 U/L, alkaline phosphatase 180 U/L and total bilirubin 1.8 mg/dL. Anti-nuclear antibody is elevated at a titer of 1:140, Anti-smooth muscle antibody is negative and Anti-mitochondrial antibody is elevated at a titer of 1:80. Liver ultrasound demonstrates normal liver size and contour, mild steatosis and no intra- or extrahepatic biliary ductal dilation. A liver biopsy demonstrates nonsuppurative destructive cholangitis and destruction of interlobular bile ducts.

Which of the following future complications should this patient be counseled on?

- A. Risk of osteoporosis
- B. Risk of atherosclerosis
- C. Risk of renal insufficiency
- D. Risk of seizure
- E. Risk of water-soluble vitamin deficiencies

#### Answer: A

This patient has primary biliary cirrhosis. Patients with cholestatic liver disease (primary biliary cirrhosis and primary sclerosing cholangitis) are at increased risk of osteoporosis, which occurs in up to one-third of patients. The relative risk for osteoporosis in PBC compared to an age-matched and sex-matched healthy population is 4.4. The bone loss is usually asymptomatic, not associated with any specific laboratory abnormalities, and is detectable by bone densitometry. The cause of osteoporosis in PBC is uncertain. Patients with PBC appear to have “low-turnover” osteoporosis in which bone formation is inhibited and bone resorption is low or normal. Vitamin D metabolism is normal in patients with PBC except for those with jaundice and clinically advanced disease. All patients should be counseled on the accelerated risk of osteoporosis and baseline and regular screening every 2-3 years using bone mineral density testing is appropriate. Patients with PBC should be provided 1000-1500 mg of calcium and 1000 IU of vitamin D daily in the diet and as supplements if needed. Patients with PBC may have hyperlipidemia but do not seem to have an increased risk of atherosclerosis. Renal function is not disturbed, there is no increased risk of seizure, and patients may develop fat-soluble rather than water-soluble vitamin deficiencies.

#### Reference:

Lindor et al. AASLD Practice Guidelines: Primary Biliary Cirrhosis. Hepatology 2009.