

## Gastrointestinal and Liver Disease During Pregnancy: Review Questions

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### QUESTIONS

Choose the single best answer for each question.

- 1. A 28-year-old woman is 22 weeks pregnant with her first child. Over the last several weeks, she has developed severe heartburn after eating meals and at bedtime. She wants to take medication to improve her symptoms. Which of the following medications would be most appropriate for first-line use in this patient?**

  - Proton pump inhibitor (PPI)
  - Histamine type 2 receptor antagonist (H<sub>2</sub>RA)
  - Over-the-counter antacid
  - Promotility agent
  - Antispasmodic
- 2. A 19-year-old woman who is 10 weeks pregnant develops severe right upper quadrant pain and jaundice with fever and an elevated leukocyte count. Her aspartate aminotransferase (AST) level is 247 U/L and her alanine aminotransferase (ALT) level is 218 U/L. Right upper quadrant ultrasound demonstrates stones in the gallbladder, dilated intra- and extrahepatic bile ducts, and a thickened gallbladder wall as well as some pericholecystic fluid. Amylase and lipase levels are normal. On antibiotics and intravenous fluids, the patient's fever and leukocytosis abate, but her jaundice does not; her transaminases remain elevated. Which of the following is the best course of action to manage this patient?**

  - Cholecystectomy only
  - Endoscopic retrograde cholangiopancreatography (ERCP) only
  - Percutaneous transhepatic cholangiography with drainage tube insertion
  - ERCP now followed by cholecystectomy in the second trimester
  - Cholecystectomy now followed by post operative ERCP in the second trimester
- 3. A 34-year-old woman develops jaundice and pruritis during her second trimester of pregnancy. She has 3 children, and during each pregnancy she developed similar episodes of jaundice. Each time, the jaundice resolved after parturition. What is the most likely cause of the patient's recurrent jaundice?**

  - Acute fatty liver of pregnancy
  - HEELP syndrome (HEmolysis, Elevated liver tests, and Low Platelets)
  - Intrahepatic cholestasis of pregnancy
  - Gilbert's syndrome
  - Recurrent hepatitis A triggered by each subsequent pregnancy
- 4. A 20-year-old woman is 35 weeks pregnant with her first child. The patient develops vague abdominal pain and nausea and presents to the emergency department. On evaluation, she is found to be mildly icteric, thrombocytopenic, and to have an AST level of 332 U/L and an ALT level of 248 U/L. The patient is presumptively diagnosed with HEELP syndrome. Which of the following is the best management option for this patient?**

  - Platelet transfusion to prevent hemorrhage
  - Administration of ursodeoxycholic acid to treat jaundice
  - Observation only
  - Liver biopsy to confirm the diagnosis before any treatment is started
  - Induction of labor

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5. A 19-year-old woman takes a vacation to the Caribbean. While there, she develops deep jaundice and right upper quadrant abdominal pain and presents to a local hospital. Hepatitis serologies are obtained, and the patient is diagnosed with acute hepatitis A, presumed to have come from eating contaminated shellfish. The patient terminates her vacation and returns home, where further testing discloses that the patient is 8 weeks pregnant, a fact of which she was unaware. Laboratory studies demonstrate the following: total bilirubin level, 6.6 mg/dL; AST level, 2300 U/L; and ALT level, 1970 U/L. The patient is not coagulopathic. The patient is admitted to the hospital for monitoring and possible therapy. Which of the following is the best management option for this patient?

- (A) Administration of hepatitis A vaccine
- (B) Administration of hepatitis B immune globulin (HBIG)
- (C) Administration of pegylated interferon and ribavirin
- (D) Administration of lamivudine
- (E) Observation with maternal and fetal monitoring

#### ANSWERS AND EXPLANATIONS

1. (C) **Over-the-counter antacid.** Gastroesophageal reflux causing heartburn is a common symptom in pregnancy and is seen in 60% to 70% of pregnant patients. Antacids are considered safe, especially in the second and third trimesters. H<sub>2</sub>RAs and PPIs are designated by the US Food and Drug Administration as pregnancy category B or C drugs and are to be avoided if possible. Proton pump inhibitors are likewise category B or C drugs. An antispasmodic would be of little help in this situation.
2. (D) **ERCP now followed by cholecystectomy in the second trimester.** Gallstones and gallstone-related diseases are common in pregnancy. The case patient's acute cholecystitis has been brought under control by fluids and antibiotics. Her dilated ducts and lack of resolution of her jaundice and the elevations of her transaminases strongly point to a stone or stones in the common bile duct (choledocholithiasis). In addition, the patient is at high risk for recurrent cholecystitis. The best course of action would be to perform ERCP now (with appropriate pregnancy precautions) to remove the stone(s) and allow normal internal biliary drainage, followed by cholecystectomy in the second trimester, when the surgery is generally felt to be safe. Failure to drain the biliary tree would put the patient at risk for pancreatitis and/or cholangitis. ERCP alone would not remove the risk of cholecystitis. Percutaneous transhepatic cholangiography usually would only be attempted if ERCP was unsuccessful.
3. (C) **Intrahepatic cholestasis of pregnancy.** Intrahepatic cholestasis of pregnancy is a relatively benign liver disease characterized by jaundice and pruritis that is often seen in sequential pregnancies. The cause of the disease is unknown, and treatment is largely symptomatic for pruritis. Acute fatty liver of pregnancy and HELLP syndrome are severe and potentially life-threatening illnesses and would not have a benign course as in the case patient. Gilbert's syndrome could explain her symptoms but would likely have manifested earlier in life. Hepatitis A is not a recurring disease.
4. (E) **Induction of labor.** The patient has HELLP syndrome as demonstrated by her presentation and laboratory findings. The exact cause of HELLP syndrome is unknown. If untreated, HELLP syndrome can progress to fulminant hepatic failure, leading to maternal and/or fetal death. Fetal delivery is the cornerstone of therapy, especially in a pregnancy that is almost full-term. Platelet transfusion would not be helpful nor would administration of ursodeoxycholic acid. Observation is unwise in this case given the advanced state of pregnancy and the hepatic abnormalities. Liver biopsy should be avoided given the risk of hematoma and hepatic rupture in thrombocytopenic patients with HELLP syndrome.
5. (E) **Observation with fetal monitoring.** Hepatitis A, unless fulminant, is often well tolerated during pregnancy, and most patients can be followed carefully with maternal and fetal monitoring as the illness resolves on its own. Hepatitis A vaccine would not be helpful here because she has already contracted hepatitis A. HBIG and pegylated interferon with ribavirin are treatments for hepatitis B and C, respectively. Likewise, lamivudine is a treatment for hepatitis B.

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