

# Hepatobiliary

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**1. A 38-year-old man presents with acute onset of epigastric and back pain one hour after eating dinner, which consisted of steak, mashed potatoes with gravy, and a glass of red wine. His WBC is 12,000/mm<sup>3</sup>, amylase is 2400 IU/L, and the remaining laboratory studies are normal. The patient was admitted to the hospital for observation with a diagnosis of acute pancreatitis. His pain and hyperamylasemia resolve within 12 hours of hospital admission. The patient indicates that he has had prior episodes of upper abdominal pain after meals, but never as severe. His ultrasound of the gallbladder demonstrates numerous small gallstones within the gallbladder. Which of the following is the most appropriate treatment for this patient?**

- A. Advise the patient to stop all alcohol consumption
- B. Advise the patient to lose weight
- C. Advise the patient to change to a vegan diet
- D. Advise the patient to undergo a laparoscopic cholecystectomy
- E. Advise the patient to have a laparoscopic cholecystectomy if he has another episode of pancreatitis.

**1. D.** This patient presents with acute pancreatitis while at dinner where wine is also served. The past history of frequent postprandial upper abdominal pain is suggestive of biliary colic; therefore, the cause of his pancreatitis is most likely related to the gallstones that are visualized in his gallbladder. He would benefit from laparoscopic cholecystectomy prior to his hospital discharge.

**2. A 29-year-old, 70 kg man with a 5-day history of worsening abdominal pain, nausea, and vomiting is diagnosed with acute pancreatitis. Which of the following is the best treatment for this patient?**

- A. NPO and fluid administration at 75 mL/hour
- B. Intravenous broad-spectrum antibiotics to prevent infectious complications
- C. Hypertonic glucose solution to prevent hypoglycemia
- D. Laparoscopy to help identify complications related to the pancreas
- E. Monitoring, maintenance intravenous fluid, parenteral analgesic, and oral diet

**2. E.** Supportive care is the mainstay of treatment for patients with acute pancreatitis. Treatments include maintenance intravenous fluid if the patient is unable to tolerate sufficient oral intake, oral diet, and analgesia for pain control. Maintenance intravenous fluid for a 70 kg man can be calculated by the "4-2-1" approach; that is 4 mL/kg for first 10 kg, 2 mL/kg for second 10 kg, and 1 mL/kg for each kg above 20 kg. For this 70 kg man, the hourly rate is  $40 + 20 + 50 = 110$  mL/hour.

**3. A 63-year-old woman is hospitalized with gallstone pancreatitis and noted to have significant abdominal pain, emesis, tachycardia, and tachypnea. Her amylase level is 3100 IU/L, glucose is 120 mg/dL, and calcium is 13 mg/dL. Which of the following is most likely to correlate with poor prognosis in disease outcome?**

- A. The patient's age
- B. The high amylase level
- C. The glucose level being less than 140 mg/dL
- D. Hypercalcemia
- E. Body mass index of 22

**3. A.** The patient's age being  $> 55$  is a poor prognostic factor based on the Ranson criteria. The level of amylase elevation does not correlate with pancreatitis outcomes. Her glucose value of less than 140 is not

an indicator of poor outcome. Hypercalcemia does not correlate with poor pancreatitis outcome, whereas hypocalcemia (< 8 mg/dL) correlates with poor outcome. High body mass index (BMI > 28) is a poor prognosticator for pancreatitis outcomes.

**4. A 28-year-old woman undergoing an obstetric ultrasound during the second trimester of pregnancy is found to have gallstones in her gallbladder. She claims that she has had indigestion and frequent belching throughout their pregnancy. Which of the following is the most appropriate treatment for her?**

- A. Recommend a low-fat diet until the end of pregnancy and then a postpartum laparoscopic cholecystectomy
- B. Schedule her laparoscopic cholecystectomy during the second trimester of her pregnancy
- C. Perform an open cholecystectomy during the second trimester
- D. Prescribe chenodeoxycholate
- E. Recommend no treatment

**4. E.** This 28-year-old pregnant woman with incidental gallstones seen during her obstetrics sonography has belching and some indigestion during her pregnancy. Her symptoms are more likely related to physiologic changes related to pregnancy than her gallstones. It is likely that she has asymptomatic gallstones and would not need any specific treatment. It is important to educate the patient regarding symptoms related to gallstones so that she can undergo early evaluation and treatment if symptoms should develop.

**5. Which of the following clinical presentations is most consistent with mesenteric angina?**

- A. Diarrhea that occurs after fatty meals, steatorrhea, and chronic epigastric and back pain
- B. Daily postprandial abdominal pain and 40-lb (18.2 kg) weight loss
- C. Intermittent epigastric pain that occurs approximately one hour after meals
- D. Chronic persistent abdominal pain and back pain of 1-month duration, jaundice, and 10-pound (4.5 kg) weight loss
- E. Recurrent postprandial abdominal pain, bloating, and vomiting

**5. B.** Choice "A" is most consistent with a description of chronic pancreatitis with exocrine pancreatic insufficiency. Choice "C" is compatible with symptoms of biliary colic. Choice "D" can be compatible with several possible diagnoses, including pancreatic cancer, abdominal lymphoma, and retroperitoneal sarcoma. Choice "E" is a nice description of a patient with chronic intestinal obstruction.

**6. For which of the following patients does splenectomy improve the primary disease process?**

- A. Hereditary spherocytosis
- B. Hairy cell leukemia
- C.  $\beta$ -Thalassemia
- D. Chronic lymphocytic leukemia
- E. Sinistral portal hypertension

**6. E.** Sinistral portal hypertension refers to left-sided portal hypertension, which is associated with thrombosis of the splenic vein. Under this circumstance, blood flow from the spleen has to return to the central venous system through the short gastric veins resulting in marked dilatation of the short gastric veins (gastric varices). Splenectomy is indicated when patients develop upper GI bleeding from gastric varices caused by sinistral portal hypertension.