

Acute and Chronic Pancreatitis: Review Questions

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QUESTIONS

Choose the single best answer for each question.

Questions 1 and 2 refer to the following case study.

A 49-year-old woman has a 24-hour history of nausea, vomiting, escalating epigastric pain radiating to her back, and fever (temperature to 101.3°F). Medical history is remarkable for depression, cholecystectomy (because of gallstones) 5 months ago, and appendectomy during childhood. She takes fluoxetine 20 mg daily for depression. Physical examination reveals a tender epigastrium as well as tenderness in the right upper quadrant. Laboratory studies reveal the following serum levels: amylase, 14,500 U/L; lipase, 9300 U/L; aspartate aminotransferase, 500 U/L; alanine aminotransferase, 449 U/L; alkaline phosphatase, 420 U/L; total bilirubin, 1.9 mg/dL; calcium, 9.7 mg/dL; triglycerides, 430 mg/dL; and leukocyte count, $16 \times 10^3/\text{mm}^3$.

- Which of the following is the most likely cause of this patient's pancreatitis?
 - Alcohol abuse
 - Fluoxetine administration
 - Gallstones
 - Hypercalcemia
 - Hypertriglyceridemia
- Which of the following diagnostic tests is most appropriate to determine if gallstones are the cause of the patient's pancreatitis?
 - Endoscopic retrograde cholangiopancreatography
 - Contrast-enhanced computed tomographic (CT) scan of the abdomen
 - Percutaneous cholangiogram
 - Plain radiographs of the abdomen
 - Ultrasonography of the right upper quadrant
- A contrast-enhanced CT scan of the abdomen in a 51-year-old man with a history of alcohol abuse confirms the presence of renal calculi and incidentally reveals a 4-cm pancreatic pseudocyst near the tail of the pancreas that does not appear to communicate with the pancreatic duct. The patient has had 3 successive attacks of acute pancreatitis over the past 2 years, the most recent occurring 4 months ago, and has recovered from each attack with conservative measures. He no longer consumes alcohol and currently feels well. Which of the following is the most appropriate next step in managing this patient's pancreatitis?
 - Observation
 - Endoscopic drainage of the cyst
 - Percutaneous drainage of the cyst
 - Surgical drainage of the cyst
 - Distal pancreatectomy with cyst removal
- A 62-year-old man with known chronic pancreatitis caused by alcoholism reports a 20-pound weight loss over the past 3 months and frequent, greasy, and malodorous stools. A 72-hour fecal fat collection confirms steatorrhea. The patient no longer consumes alcohol and reports no abdominal pain. Which of the following is the most appropriate first-line treatment for this patient?
 - Administration of enteric-coated pancreatic enzyme replacement tablets with meals and snacks and concurrent use of calcium-containing antacids
 - Administration of non-enteric-coated pancreatic enzyme replacement tablets with meals and snacks with concurrent dosing with a histamine₂ blocker
 - Endoscopic placement of a pancreatic duct stent
 - Institution of a low-fat diet (less than 20 g fat/day)
 - Subcutaneous administration of octreotide 200 µg 3 times daily

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EXPLANATION OF ANSWERS

- 1. (C) Gallstones.** Gallstones are the most common cause of acute pancreatitis, accounting for 45% of all cases. This patient's history of gallstones, as well as her elevated serum bilirubin, alkaline phosphatase, and transaminase levels and markedly elevated serum amylase and lipase levels, strongly suggests biliary and pancreatic duct obstruction due to gallstones. Although the patient had a cholecystectomy, this surgery does not rule out gallstones as a cause of pancreatitis; the patient could continue to form stones or could have retained a stone, even after surgery. Alcohol abuse, although it is a very common cause of acute pancreatitis, would be unlikely to cause such a severe elevation in the transaminase levels. Hypercalcemia is a cause of acute pancreatitis, but this patient has a normal calcium level. Hypertriglyceridemia is also a cause of acute pancreatitis; however, a triglyceride level of 430 mg/dL is insufficiently elevated to account for this patient's pancreatitis, and other conditions can cause elevated triglyceride levels in this type of patient. Fluoxetine has not been implicated as a cause of acute pancreatitis.
- 2. (E) Ultrasonography of the right upper quadrant.** When there is a strong suspicion of gallstone-induced pancreatitis, ultrasound is the imaging modality of choice; it is inexpensive, can be obtained quickly, and is extremely sensitive in detecting gallstones and a dilated common bile duct. However, when the diagnosis of pancreatitis is in doubt or the suspicion of gallstone-induced pancreatitis is low, a contrast-enhanced computed tomographic (CT) scan is the best study to evaluate the abdomen. Endoscopic retrograde cholangiopancreatography may be required to decompress obstructed biliary and pancreatic ducts, but it is a poor diagnostic test in this patient's situation. In patients with acute pancreatitis, plain abdominal radiographs frequently show no abnormalities or may reveal nonspecific findings such as an ileus. A percutaneous cholangiogram is not indicated for this patient, because it is invasive and is rarely performed for diagnostic purposes alone.
- 3. (A) Observation.** Pseudocysts develop in approximately 10% of patients who experience pancreatitis. Cysts can cause pain, become infected, leak, compress adjacent organs, bleed, and even erode into the mediastinum. Cysts greater than 5 to 6 cm in diameter are associated with a 30% to 50% risk of developing complications. Because of the patient's lack of symptoms, small cyst size, and relatively recent previous episode of acute pancreatitis, observation is the most appropriate next step in managing his pancreatitis. Endoscopic, percutaneous, or surgical drainage of pseudocysts is sometimes warranted when cysts become painful or infected, but these procedures are not indicated in this patient because his cyst is small and he is asymptomatic. Distal pancreatectomy and cyst removal is, likewise, too drastic a measure in this patient. Serial CT scans might show the cyst to resolve on its own in the coming months. Evidence of cyst-related complications may warrant invasive management in the future, but not at the present time.
- 4. (B) Administration of non-enteric-coated pancreatic enzyme replacement tablets with meals and snacks with concurrent dosing with a histamine₂ blocker.** Non-enteric-coated pancreatic enzyme replacement with concurrent histamine₂-blocker dosing will deliver active enzymes to the proximal small bowel and help reduce the malabsorption and steatorrhea that this patient is experiencing. Enteric-coated enzyme preparations can also be effective, but they are more expensive and, when administered with calcium-containing antacids, can worsen steatorrhea by complexing with fatty acids, thus making absorption more difficult. Institution of a low-fat diet can worsen malnutrition; a normal allowance of fat intake (up to 40 g/day) can result in greater patient compliance. Octreotide is often an effective agent for treating the pain of chronic pancreatitis, but it does not enhance food absorption. Placement of pancreatic duct stents also may aid in the treatment of pain in patients with dilated pancreatic ducts, but the stents do not improve digestive capacity.

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