

What is the Biliary System?

Worksheet

Bile flows from hepatocytes through canaliculi into the right and left hepatic ducts, which join to form the common hepatic duct; this merges with the cystic duct from the gallbladder to form the common bile duct, which empties into the duodenum at the ampulla of Vater.

Questions

1. What two ducts join to form the common bile duct?
 - A) Pancreatic duct and cystic duct
 - B) Common hepatic duct and cystic duct
 - C) Left and right hepatic ducts only
 - D) Cystic duct and ampulla of Vater
2. Where does bile enter the small intestine?
 - A) Pylorus
 - B) Ampulla of Vater
 - C) Ileocecal valve
 - D) Jejunum directly
3. What triggers gallbladder contraction?
 - A) Insulin
 - B) Cholecystokinin (CCK)
 - C) Glucagon
 - D) Bile acids alone
4. A stone at the ampulla of Vater can cause which combination of problems?
 - A) Only jaundice
 - B) Only pancreatitis
 - C) Jaundice and pancreatitis
 - D) Neither, it's asymptomatic
5. After a fatty meal, the gallbladder contracts and releases stored bile. Trace the path bile takes from the gallbladder to the duodenum.
6. A gallstone lodges in the cystic duct. What happens to bile flow from the liver to the intestine?
7. A gallstone instead lodges at the ampulla of Vater. Why can this cause both jaundice and pancreatitis?
8. Define: What forms the common bile duct?
9. Define: What is the role of the gallbladder?
10. Define: Where does bile enter the duodenum?

Answer Key

1. B) Common hepatic duct and cystic duct - The common hepatic duct joins the cystic duct to form the common bile duct.
2. B) Ampulla of Vater - Bile and pancreatic juice both enter at the ampulla of Vater.
3. B) Cholecystokinin (CCK) - CCK is released when fat enters the duodenum, triggering contraction.
4. C) Jaundice and pancreatitis - Blocking the shared outlet backs up both bile and pancreatic secretions.
5. Bile leaves the gallbladder via the cystic duct. The cystic duct joins the common hepatic duct to form the common bile duct. The common bile duct meets the pancreatic duct at the ampulla of Vater, and bile enters the duodenum through the sphincter of Oddi.
6. The cystic duct connects only the gallbladder to the common hepatic duct. Bile from the liver can still flow directly through the common hepatic duct into the common bile duct and reach the duodenum, though the gallbladder itself becomes obstructed, causing cholecystitis.
7. The ampulla of Vater is the shared exit point for both the common bile duct and the pancreatic duct. Blockage here backs up bile, causing jaundice, and also backs up pancreatic enzymes, triggering pancreatitis, simultaneously.
8. The union of the common hepatic duct and the cystic duct.
9. It stores and concentrates bile between meals, then contracts, via CCK, after a fatty meal.
10. At the ampulla of Vater, through the sphincter of Oddi.

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