

The biliary system: an essential component of the digestive process.

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Received: 07-Feb-2023, Manuscript No. JGDD-23-88896; **Editor assigned:** 09-Feb-2023, JGDD-23-88896 (PQ);

Reviewed: 23-Feb-2023, QC No. JGDD-23-88896; **Revised:** 02-May-2023, Manuscript No. JGDD-23-88896 (R);

Published: 09-May-2023, DOI:10.35841/jgdd.8.3.143

Abstract

Your digestive system is made up of the Gastrointestinal (GI) tract and your liver, pancreas and gallbladder. The GI tract is a series of hollow organs that are connected to each other from your mouth to your anus. The organs that make up your GI tract, in the order that they are connected, include your mouth, esophagus, stomach, small intestine, large intestine and anus.

Keywords: Mouth, Esophagus, Stomach, Small intestine

Introduction

The biliary system is a crucial part of the digestive system, responsible for the production and transportation of bile, a digestive fluid that helps to break down fats in the small intestine. The biliary system consists of the liver, gallbladder and bile ducts. Here is a closer look at how the biliary system works. Bile production is the liver produces bile, a yellow green fluid that contains cholesterol, bile salts and bilirubin. Bile helps to emulsify fats, making it easier for digestive enzymes to break them down.

Storage and release can bile produced by the liver is stored in the gallbladder, a small pouch located under the liver. When fat enters the small intestine, signals are sent to the gallbladder to release bile into the small intestine through the common bile duct. Bile ducts are the bile ducts are tubes that transport bile from the liver to the gallbladder and from the gallbladder to the small intestine. The common bile duct joins with the pancreatic duct to form the hepatopancreatic ampulla, which opens into the duodenum (the first part of the small intestine).

Description

Bile reabsorption is after bile has completed its role in digestion; it is reabsorbed into the bloodstream and returned to the liver to be reused. This efficient process helps to conserve bile and prevent waste. Liver function is liver not only produces bile but also plays a key role in regulating its release into the small intestine. By controlling the release of bile, the liver helps to ensure that the right amount of bile is available for optimal digestion.

Bile salts (bile acids) are the major organic component in bile. The liver uses active transport to secrete bile salts into the canaliculus, the cleft between adjacent hepatocytes. Canalicular transport is the rate limiting step in bile formation. Once secreted, bile salts draw other bile components particularly sodium and water into the canaliculus by osmosis. Bile salts are also biologic detergents that enable the body to excrete

cholesterol and potentially toxic compounds e.g. bilirubin, drug metabolites. The function of bile salts in the duodenum is to solubilize ingested fat and fat soluble vitamins, facilitating their digestion and absorption. From the liver, bile flows from the intrahepatic collecting system into the right or left hepatic duct, then into the common hepatic duct.

Eating releases gut hormones and stimulates cholinergic nerves, causing the gallbladder to contract and the sphincter of Oddi to relax. As a result, the gallbladder empties 50% to 75% of its contents into the duodenum. Conversely, during fasting, an increase in sphincter tone facilitates gallbladder filling. Bile salts are poorly absorbed by passive diffusion in the proximal small bowel; most intestinal bile salts reach the terminal ileum, which actively absorbs 90% of bile salts into the portal venous circulation. Returned to the liver, bile salts are efficiently extracted, promptly modified e.g. conjugated if they arrive in the free form and secreted back into bile. Bile salts circulate through this pathway from liver to gut to liver the enterohepatic circulation 10 to 12 times/day.

Conclusion

In conclusion, the biliary system is a complex and vital part of the digestive system, playing an important role in the digestion of fats and the regulation of bile. If you suspect any problems with your biliary system, it is important to seek medical attention promptly to diagnose and treat the issue.

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