Bile production deficiency in the human organism.

Abstract

The human body consists of many biological systems that carry out specific functions but at the same time are interconnected. Metabolic processes are the bases of life. Throughout those biological pathways, calories from food and beverages are combined with oxygen to release the energy that the body needs to function. The digestive system is where food is broken down into macromolecules and many enzymes and substances play a role in that process. Some deficiency in normal production of enzymes or proteins result from genetic factors or are the consequences of other diseases's complications. The bile is responsible for food digestion. When it is abnormally produced, it could not only indicate a failure of some linked organs in the digestive tract but could also cause more serious complications.

Introduction

The gallbladder stores the bile to help digest the food that we eat . The bile is made in the liver and contains a mix of bilirubin, cholesterol, and bile acids and salts. Bile is composed of acids and salts, phospholipids, cholesterol,pigments,water and electrolyte chemicals that keep the solution slightly alkaline . Bill ducts, drainage pipes, carry bile from the liver to the gallbladder and from the gallbladder to the small intestine.

The amount of bile secreted in the duodenum (shortest segment of the small intestine)is controlled by some hormones (cholecystokinin,secretin,gastrin and the somatostatin) and the vagus nerve. Approximately around 800 to 1000ml of bile are produced by the liver. Many

enzymes and multiple steps are crucial for bile production.Interruptions in those processes could lead to bile acid deficiencies and more complications.

Detailed Description of the Topic

Many factors could affect bile secretion.The genetic factor is one of them. Genes provide essential instructions for the synthesis of proteins that play a critical role in many functions of the body. A mutation in specific genes can result in an overproduction of a deficiency in the production of the bile.Many Research published in Gastroenterology have suggested that genetic factors as potential causes interruptions and alterations of crucial pathways that produce the bile. When a mutation of a gene occurs, the protein product may be faulty, inefficient, or absent. Depending upon the functions of the particular protein, this can affect larger organ systems of the body. These mutations are believed to be inherited as autosomal recessive traits. Congenital bile acid synthesis defect type 1 is a genetic disorder characterized by cholestasis, a condition that impairs the production and release of bile from liver cells. People with this abnormality cannot synthesize bile acids, which are a component of bile that stimulate bile flow and help it absorb fats and fat soluble vitamins. As a result, an abnormal form of bile is produced.

A biliary obstruction can affect the bill ducts, blocking its transport so that the needed amount will never reach its destination. In fact, a deficiency in Bile production can indicate a more serious problem with the gallbladder, liver, or pancreas. A failure in one of these organs can heavily affect the production processes. Gallstones are one of the most common causes of blocked bile ducts. Stones typically form inside the gallbladder and block the drainpipe at the base of the liver. If the duct remains blocked, bilirubin backs up and enters the bloodstream. Less common causes of the drainage pipe blockage include cancers of the bile duct(

cholangiocarcinomas) and structures (scars that narrow the ducts after infection, surgery for inflammation.

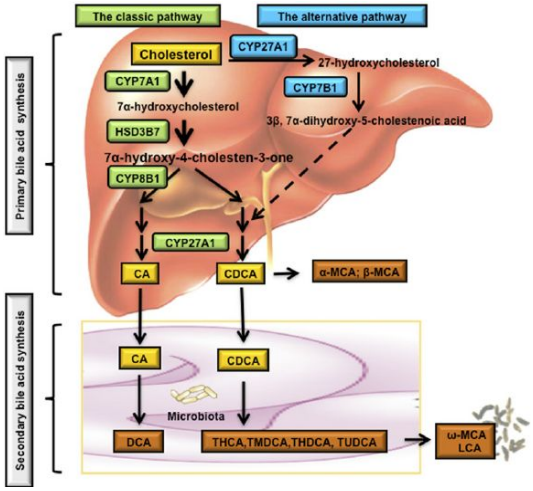

Figure1: Bile production pathways

Discussion

The Bile is crucial for digestion, without which we would not be able to break down and synthesize the proteins that we need for the body. In fact, a deficiency in Bill secretion could not only trigger more serious disease but it could also be the symptoms of an already pre existing health problem. Many research underlined genetic factors that could be the cause of this bile secretion. Even if they are rare, genetic mutation can explain why some people develop abnormalities and others do not. It is also important to catch the fact that when we talk about bile secretion , organs like the liver ,pancreas, and gallbladder are directly involved in the production processes. Some medical studies suggested that inadequate levels of bile could cause serious build up of toxins in the liver because of the fact that bile conjugates and carries out the

body’s burden of toxicity. Liver congestion can result in gall bladder stones and stagnation. The interconnection and interdependence of organs in the organism is phenomenal.When one thing is not normal, underproduced or overproduced, other organs are directly impacted. For example if a person's cholesterol production is low, bile production is also likely to be low. Another important component to fat digestion and utilization is hormone synthesis. Hormones are synthesized from fat. Endocrine dysfunction may severely improve.

Conclusion

The Bile importance in our digestive system and our whole body is sometimes underestimated. We must acknowledge how crucial that fluid is for food digestion and how it could be a perfect indicator for the health of the liver, pancreas and gallbladder. Many waste products are eliminated from the body by secretion of bile. . Any person experiencing yellowing of the skin (jaundice) or eyes (icterus), from the buildup of a waste product called bilirubin, Itching , Light brown urine, Weight loss, night sweats, Greasy or clay-colored stools should search for medical attention. If neglected, more serious complications could be developed.

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