

Clinical Analysis of Pancreatitis and Its Association with Liver Disease

Tom Dashara*

Department of Pathology, Beth Israel Deaconess Medical Center, Chelsea, USA

DESCRIPTION

The pancreas is a long, flat gland located in the upper abdomen behind the stomach, near the beginning of the small intestine. The pancreas produces digestive enzymes (carbohydrates, proteins, and fat) as well as the hormone insulin, which regulates blood sugar levels (glucose).

Pancreatitis is an inflammation of the pancreas caused by the activation of digestive enzymes prior to their release into the small intestine, causing these enzymes to attack the pancreas and cause inflammation. Pancreatitis is classified into two types: Acute and Chronic. Acute pancreatitis appears suddenly and usually lasts a few days, whereas chronic pancreatitis develops over time.

Acute pancreatitis

Acute pancreatitis occurs suddenly and usually lasts for several days. Acute pancreatitis is caused primarily by the following factors:

- **Gallstones:** Gallstones, which form in the gallbladder, can obstruct the bile duct, preventing pancreatic enzymes from reaching the small intestine and forcing them back into the pancreas. The enzymes then begin to irritate the pancreatic cells, resulting in the inflammation associated with pancreatitis.
- **Chronic alcohol abuse:** Alcohol and its metabolic by products, including acetaldehyde, contribute to liver injury by causing liver cell damage after digestion. Alcohol consumption causes a wide range of hepatic lesions, the most common of which are fatty liver (steatosis), hepatitis, cirrhosis, liver failure, and liver cancer. Furthermore, long-term alcohol consumption results in calcified pancreas and fibrotic tissue this eventually results in chronic pancreatitis.

Chronic pancreatitis

Long-term alcohol abuse is a major contributor to chronic pancreatitis because it causes liver damage repeatedly over a long period of time, resulting in chronic pancreas inflammation.

Liver Diseases

Any disturbance in liver function that causes illness is referred to as liver disease or hepatic disease. A variety of factors can contribute to liver disease. Nonetheless, the following are the primary causes of liver disease:

Alcohol abuse: Liver diseases such as cirrhosis and liver cancer are more common in men than in women, and one of the major risk factors is heavy or chronic alcohol use. Damage to the liver over time causes scarring (cirrhosis), which can lead to liver failure and cancer. The amount and duration of alcohol consumption influence the likelihood of developing disease. A fatty liver may develop if a large amount of alcohol is consumed in a 2-week period. Cirrhosis risk increases significantly if alcohol consumption continues for more than 5 years, with a daily intake of 20-30 grams in women and 40-50 grams in men. The effects of alcohol on individuals can vary greatly depending on the amount of alcohol consumed, the drinking pattern (e.g., drinking on an empty stomach without food), and other personal factors. Alcohol consumption causes a wide range of hepatic lesions, the most common of which are fatty liver (steatosis), hepatitis, cirrhosis, liver failure, and liver cancer. Alcohol and its metabolic by products, including acetaldehyde, contribute to liver injury by causing liver cell damage after digestion. As a result, the liver cannot function normally, resulting in fatty liver, a build-up of fat in the liver. Furthermore, in alcoholic hepatitis, liver injury causes inflammation *via* a classic sterile necrosis response. In fact, if alcohol consumption is stopped during the early stages of liver damage, the liver can compensate for its limited function. Finally, liver function can be completely preserved. However, if alcohol consumption continues, the liver's self-compensation mechanism eventually fails. Repeated and excessive alcohol abuse causes fibrotic scarring, alcoholic liver cirrhosis, liver failure, and, eventually, end-stage liver cancer.

- **Genetics:** Abnormal genes inherited from parents can result in a variety of abnormal substances in the liver. Deficiency of certain liver enzymes is also caused by genetic abnormalities (Alpha-1 antitrypsin). These cause liver damage or malfunction, which can lead to impaired liver functions, cirrhosis, and liver cancer.

Correspondence to: Tom Dashara, Department of Pathology, Beth Israel Deaconess Medical Center, Chelsea, USA, E-mail: dashara_tom@edu

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- **Certain underlying diseases, haematological disorders, and hepatitis B and C infection:** When combined with alcohol abuse, these conditions progress quickly, eventually leading to cirrhosis and liver cancer.
- **Exposure to carcinogenic substances that cause liver cancer:** Carcinogenic substances include aflatoxin-contaminated foods such as groundnuts, tree nuts, and maize, grilled or over-burnt meats containing Heterocyclic Amines (HCA) and Polycyclic Aromatic Hydrocarbons (PAH), processed foods containing potassium nitrate, and uncooked freshwater fish containing liver flukes that may cause cholangiocarcinoma, an aggressive cancer caused by epitheli.
- **Cigarette smoking:** Tobacco use is a major risk factor for a variety of chronic diseases. Several studies have found that smoking is strongly linked to liver diseases such as neoplasm of the liver and chronic liver disease.