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Acute Pancreatitis (AP) and Dietary Habbits

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Inflammation of pancreatic parenchyma is said to be pancreatitis. It can be acute, presenting as emergency with short history or chronic as a continuation of acute with a long history. Autodigestion is responsible for pancreatitis on background of premature activation of pancreatic enzymes within the pancreas. Acute Pancreatitis is acute inflammation of the pancrease which can be mild to moderate requiring hospital admission or severe leading to distressing outcomes such as systemic inflammatory response syndrome or multi organ failure. Acute pancreatitis is a leading cause in emergency admissions to hospital with a rise in its incidence (1). It may present as pain in epigastrium, retching, nausea, shock, relieve of pain on lying forward and increase in enzymes levels. There are several factors contributing to its occurrence. There are multiple etiologies for developing AP including gallstones, hypertriglyceridemia, and certain medications such as angiotensin-converting enzyme (ACE) inhibitors, azathioprine, furosemide, 6-mercaptopurine, pentamidine, sulfa drugs, and valproate. The effects of two modifiable risk factors, alcohol consumption and cigarettes smoking, have been extensively evaluated as contributing to the development and progression of AP (2, 3). But of all causes, there are two most important, they are gall stones and alcohol. However, another potential important modifiable risk factor for AP that has not been studied as well is diet. Diet can affect causing pancreatitis directly and indirectly. Directly by effects produced from substances like fat and indirect by formation of gall stones which lead to pancreatitis.

As proved by the study that diet rich in fat leads to gall stone formation (4). It also led to hypercholesteremia and hyperlipidemia which cause AP. A large cohort study was published in US in the year 2017 which studied association between certain dietary patterns and the risk of acute pancreatitis AP (5). The authors found that the dietary intake of food rich in saturated fat and cholesterol such as red meat and eggs was associated with an increased risk of biliary AP, whereas a study done in US showed fiber intake was inversely associated with both biliary and non-biliary AP (6). Vitamin D intake was inversely associated with biliary AP, whereas coffee intake was protective toward non-biliary AP and recurrent or chronic pancreatitis (6). Another cohort study done on a large multi ethic group concluded that, associations between dietary factors and pancreatitis were observed mainly for gallstone-related AP. Interestingly, dietary fiber protected against AP related and unrelated to gallstones. Coffee drinking about four cups/day protected against AP not associated with gallstones (6).

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However, there is another study, where it was examined whether overall diet quality influences the natural history of non-gallstone-related acute pancreatitis, it turned out that with non-gallstone-related acute pancreatitis, and there was no clear association between overall diet quality and risk of recurrent and progressive pancreatic disease (7). Here comes another study that studied association of dietary habits with severity of Acute Pancreatitis and concluded that a meat-rich diet is independently associated with the development of persistent organ failure (severe disease) in patients with AP (8). Vegetable consumption, but not fruit consumption, may play a role in the prevention of non-gallstone-related acute pancreatitis (9). Coffee consumption was also studied but there was found no association between its consumption and occurrence of AP (10). Diets with high glycemic load are associated with an increased risk of non-gallstone-related acute pancreatitis (11). Consumption of fish was studied too, but consumption of total fish (fatty fish and lean fish combined) may be associated with decreased risk of non-gallstone-related acute pancreatitis (12). Because of limited work present on this subject of acute pancreatitis and dietary habits, and also due to conflicting outcomes among studies, further work need to be done to find the association. So we can conclude that there are several dietary factors which might be associated with acute pancreatitis like diet rich in saturated fat and cholesterol for example alcohol, eggs and red meat while some diet like intakes of vitamin D, milk, and fruits are associated with a reduced risk.

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