

Pancreatitis

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PANCREATITIS Introduction: Pancreatitis is an inflammatory disease that affects the pancreas and may lead to persistent and progressive morphological and functional disorders of the whole organ.” This disease is as a result of abnormal release of trypsin including the autodigestion which is likely to cause the patient to suffer inflammation. In extreme cases, it may result into bleeding. This can be very hazardous to the pancreas (Shrikhande et. al., n. d).

Brief Explanation and Pathophysiological Concepts

Pancreatitis is an inflammation of the pancreas. It can be acute or chronic and often presents with pain in the middle or upper left abdomen possibly radiating to the back or shoulder region. Pancreatitis is the result of an inappropriate release of trypsin, which results in a wide variety of digestion enzymes activating, including autodigestion of the pancreas which causes inflammation, as well as bleeding and can damage the pancreas extensively. Anti-inflammatory agents are released by the body to try and mediate the inflammation of the pancreas. When this happens, other organs can become dysfunctional. In the worst cases, kidney (renal) failure may occur, the patient may go into shock, or acute respiratory distress syndrome, or ARDS, can occur.

The discovery of the mechanisms that cause exocrine parenchyma to lessen has not yet been discovered yet. How pancreatic acinar and ductal cells occur has not yet been discovered though a lot of effort has been put in to establish the facts. A lot of ideas have been presented by different pathologists on pancreatitis but none of them has seriously been absorbed ((Shrikhande et. al., n. d). Though there is one concept that has been

adopted by these doctors. They claim that if alcohol is consumed in large quantities, it leads to a reduced production of lithostatin responsible for the stability of pancreatic juice. This then restricts the formation of protein plugs. It is this restriction of the formation of protein plugs that causes this disease.

According to Cheema and Aldeen (2010), there are two levels of pancreatitis: mild, and severe. Mild pancreatitis is defined as a localized reaction.

According to Cheema and Aldeen, “ Mild pancreatitis occurs in about 80% of patients, is self-limited, and resolves without complication” (p 1). The remaining 20% of the patients with pancreatitis will develop severe pancreatitis. What this means is that the occurrence of the disease resolves without complication or major medical intervention. On the other hand, severe pancreatitis is diagnosed by the presence of complicating factors. In severe pancreatitis, pseudocysts can develop, which must be identified by ultrasound, CT scan or aspiration. Pseudocysts may require surgical intervention if they cause complications, otherwise they may be left alone. Abscesses can also develop, and may be identified using the same methods as the pseudocysts. Abscesses may be drained or treated with antibiotics. Finally, or all or a portion of the pancreas can develop necrosis. This is a serious condition which may require extensive treatment and an involved hospital. stay. Organ failure can develop, including renal failure and pulmonary insufficiency. Overall, the mortality rate for pancreatitis is low, perhaps 5%. If severe pancreatitis develops, the mortality rate rises to 25%. However, if organs fail (particularly multiple organs) then the mortality raises to nearly half of those inflicted, with the majority of the deaths occurring

within two weeks of the multiorgan function cessation (Cheema & Aldeen, 2010, p 1).

The inappropriate release of trypsin which causes pancreatitis can occur for different reasons. One of the most typical causes is as a result of the lodging of a gallstone in the bile duct or the pancreatic duct. When this happens, pressure increases in the ducts, bile backs up, and trypsin activates (Cheema & Aldeen, 2010, p. 1). Wang, Gao, Wei, Wang, & Ding (2009) agree with this description; but they point out that acute pancreatitis has been investigated for centuries and the majority of the pathogenetic theories are controversial (Abstract). They hypothesize that “ acute biliary pancreatitis and other causes of acute pancreatitis possess a common pathogenesis” and that if confirmed, this will give impetus to improve traditional therapies (Wang et al., 2009, Abstract).

Key Symptoms or Features:

A medical practitioner can tell if an individual is suffering from pancreatitis. The patient’s history could be filled with consumption of large amounts of fatty food. Other symptoms include Nausea, vomiting, the stomach may be tender to touch and pain of the abdomen flowing to the back. This disease is mostly caused by high alcohol consumption, especially in men and presence of kidney stones in obese people, especially women. If a patient suffers from duodenal obstruction, jaundice and severe abdominal pains, it is more likely that the individual may be suffering from pancreatitis.

Quizlet (2012), the flashcards for EMTs, suggest that pancreatitis should be considered if the patient has been eating a large amount of fatty foods and if they have ‘ nausea, vomiting, abdominal tenderness, pain from upper

abdomen to back” (cards 13, 14). Cheema and Aldeen (2010) reported that there are several significant risk factors for pancreatitis. Two primary risks are gallstones, and alcohol consumption (Tonsi, Vacchion, Crippa, Malleo, & Bassi, 2009). Of course, obesity is linked with the development of gallstones, suggesting a link between obesity and pancreatitis. They suggest that pancreatitis in conjunction with gallstones is most likely to occur if the patient is older than 60 years of age and has small stones. However, they report that 36% of the time, alcohol abuse is related to the development of pancreatitis. In addition, Sekimoto et al. (2006) have reported that the incidence of pancreatitis is increasing worldwide, making it more likely that paramedics and EMTs will encounter the disease. Since men are more likely to develop pancreatitis from alcohol abuse and women are more likely to develop it as a result of gallstones (according to Sekimoto et al., 2006), these factors give leads to paramedics to pursue when taking a history of the patient. Sekimoto et al. (2006, Cholelithiasis) agreed with Cheema and Aldeen (2010) that smaller gallstones are more likely to be related to pancreatitis than larger stones.

Abnormal presentations, however, must be considered as well, especially if the patient has a previous diagnosis of pancreatitis. Some causes of abnormal pancreatitis presentation are duplications in the gastrointestinal tract, which can be present in the very young as congenital defects (Konstantinidis, 2011, 1). According to Konstantinidis, “ The most frequent location [of the duplication] is the ileum or ileocecal region, whereas the duodenum is among the least frequent locations. ... Associated skeletal, alimentary, or genitourinary tract anomalies can assist in the diagnosis”

(2011, p 1). Because of this, pancreatitis cannot be ruled out in the very young or unlikely, as it can be caused by congenital defects prior to the target age of the disease.

Patients presenting to the EMT or Paramedic with symptoms of duodenal obstruction, such as a palpable mass in the abdomen, jaundice coloring in the eyes or skin, or severe abdominal pain accompanied by a lack of bowel sound must be considered as possibly presenting with pancreatitis (Konstantinidis, 2011, 1).

A number of drugs have been associated with an increased rate of pancreatitis, including HIV drugs, estrogen, and even salicylates (including aspirin). Anti-cancer drugs have also been implicated (Sekimoto et al, 2006, Drugs). There is some evidence that high blood triglycerides can increase risk of pancreatitis (Sekimoto et al., 2006, Hyperlipidemia). There is a link between HIV infection and pancreatitis but the link appears to be related to the medication taken for HIV rather than from the infection per se (Sekimoto et al., 2006, HIV Infection). Microlithiasis has been found in 75% of the cases of acute pancreatitis (Sekimoto et al., 2006, Idiopathic). Taking a thorough medical history and recording as much of the patient's drug history as possible will be useful to the Paramedic or EMT when diagnosing possible pancreatitis if the patient is taking any medications that may be linked to the disease.

Paramedics taking a history of the patient should ask if the victim is pregnant, had a recent physical trauma, viral infection, hepatitis B., cytomegalovirus, herpes simplex II, bacterial infections, Mycoplasma, lupus, end-stage renal failure, rheumatoid arthritis, or Sjogren's syndrome

(Sekimoto et al., 2006, Other Factors). If the patient is a child it is possible but unlikely that they will develop pancreatitis, however, as mentioned above, it can be caused by congenital gastrointestinal defects. Previous pancreatitis should also be considered a risk factor since there is a reoccurrence rate of nearly 50%. Acute pancreatitis can become chronic between 3% and 13% of the time (Sekimoto et al., 2006, Development). Tonsi et al. (2009, Diagnosis) suggest that the combination of abdominal pain combined with the elevation of pancreatic enzymes should confirm a diagnosis. The ability to measure pancreatic enzyme will not be available to the paramedic. However, Tonsi et al. (2009) suggest that abdominal pain in the upper left quadrant of the abdomen, rotating to the lower thoracic region of the back, generally accompanied by nausea and vomiting (90% of the time) should give a suggestion that pancreatitis may be involved. The presence of ecchymoses in the flank or the periumbilical region is generally a sign of more advanced disease (Tonsi et al., 2009, Diagnosis).

Significant Differential Diagnoses

Gardner and Katz (2011, DDX) have listed a number of differential diagnoses that must be considered in the diagnosis of pancreatitis. They report that it is important to rule out gastroenteritis, gastric cancer, duodenal ulcers, pneumonia, obstruction of the colon, gallbladder disease, acute mesenteric ischemia, and acute respiratory distress syndrome.

In ruling out differential diagnoses, Gardner and Katz (2011, History) suggest taking a history and questioning the patient about the pain and its duration. If the pain is better when the patient is supine, and the pain lasts more than a day, and is in the upper abdomen, the chance that the illness is

pancreatitis is greatly increased. The pain typically comes on suddenly and increases in severity, becoming a constant pain. Additionally, if the patient presents with symptoms outside of the normal range for pancreatitis, such as the acute lower right pain presentation of appendicitis, or a palpable mass in the abdomen, other diseases and conditions must be ruled out or in some cases, diagnosed alongside with pancreatitis as these are not mutually exclusive conditions.

In the brief exam, fever, tachycardia, and hypotension may be present (though are not required for a final diagnosis). Tenderness of the abdomen, distension, and diminished bowel sounds are often present. The patient may be pale, diaphoretic, and listless (Gardner & Katz, 2011, Presentation). These symptoms, combined with a history of gallstones, alcohol abuse or one of the other precipitating factors, should be used to rule out the differential diagnoses. In addition, it is imperative for the EMT or Paramedic to determine if the patient has been subject to pancreatitis in the past, as it can be recurring in many patients. As alcohol can be a factor in the development of pancreatitis as well, it is important to understand the patient's use of alcohol over the lifetime of the patient, particularly if the patient is male, as males tend to develop pancreatitis in reaction to alcohol abuse more commonly than women.

Conclusion:

There has been no reliable facts said on this matter. However, the research projects still continue as many scholars try to solve the puzzle. Technology is rapidly advancing and research methods are getting hi-tech giving way for a hope to understand the disease which will be treatable in the near future.

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