

## A Systemic Review on Patient Care with Pancreatitis

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### Abstract

Pancreatitis is a condition characterized by inflammation of the pancreas. The pancreas is a large organ behind the stomach that produces digestive enzymes and a number of hormones. About 80% of the attacks are mild, 20% are severe and they are commonly accompanied by necrosis of the pancreas and or organ failure. It is reported that the Southern states of India have highest incidences of Pancreatitis, ranging from 114-200/100,000 population. Rest of the globe reports 1.6-27 cases per 100,000 populations.

**Keywords:** Pancreatitis; inflammation; stomach; enzymes; hormones.

## INTRODUCTION

Pancreatitis is inflammation of the pancreas. The pancreas is a long, flat gland that sits tucked behind the stomach in the upper abdomen. The pancreas produces enzymes that help digestion and hormones that help regulate the way your body processes sugar (glucose). There are two main types: acute pancreatitis, and chronic pancreatitis. Signs and symptoms of pancreatitis include pain in the upper abdomen, nausea and vomiting.

## DEFINATION

“Pancreatitis is the redness and swelling (inflammation) of the pancreas. This happens when digestive juices or enzymes attack the pancreas.”

## TYPES

*There are two types of pancreatitis: acute and chronic.*

### 1. Acute pancreatitis

Acute pancreatitis is a temporary condition. It happens when your pancreas is attempting to recover from a minor, short-term injury. Most people with acute pancreatitis will recover completely in a few days with supportive care: rest, hydration and pain relief. However, a very severe case of acute pancreatitis can cause serious health complications, some of them life-threatening.

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## 2. Chronic pancreatitis

Chronic pancreatitis is a long-term, progressive condition. It doesn't go away and gets worse over time. It happens when the injury or damage to your pancreas never stops. Chronic pancreatitis will eventually do lasting damage to your pancreas, although it may take many years. Constant inflammation causes scarring of your pancreas tissues (fibrosis), which stops them from making enzymes and hormones.

### ETIOLOGY

*The top two causes of pancreatitis are:*

Gallstones

Heavy drinking

These causes together represent about 80% of pancreatitis cases

- ❖ **Gallstone pancreatitis:** Your common bile duct empties bile from your gallbladder into your intestine through the same opening as your pancreatic duct. If a gallstone enters the common bile duct and gets stuck at that junction, it can temporarily block the drainage of pancreatic juice from the pancreatic duct. This traps the enzymes inside your pancreas. As pressure builds up behind the obstruction, it activates the enzymes inside your pancreas and they begin digesting the pancreas itself. This causes the inflammatory response of gallstone pancreatitis.
- ❖ **Alcohol use:** Heavy alcohol use is a clear cause of pancreatitis, though scientists aren't sure why. It may be that the toxic byproducts of alcohol in your blood cause an inflammatory response in your pancreas, or they somehow chemically activate the digestive enzymes inside your pancreas. Scientists estimate that heavy alcohol use accounts for around half of both acute pancreatitis and chronic pancreatitis cases.
- ❖ **Other causes**  
Less common causes of pancreatitis include: These causes together represent about 20% of pancreatitis cases. Occasionally, no cause is found.
  - Infections, such as viruses.
  - Autoimmune disease (autoimmune pancreatitis).
  - Complications of cystic fibrosis.
  - High blood triglyceride levels (hypertriglyceridemia).

- High blood calcium levels (hypercalcaemia)
- Ischemia (reduced blood supply)
- Cancer
- Traumatic injury to your pancreas
- Certain medications that irritate the pancreas

### RISK FACTORS

*Factors that increase your risk of pancreatitis include:*

- **Cigarette smoking.** Smokers are on average three times more likely to develop chronic pancreatitis, compared with nonsmokers. The good news is quitting smoking decreases your risk by about half.
- **Obesity.** You're more likely to get pancreatitis if you're obese.
- **Diabetes.** Having diabetes increases your risk of pancreatitis.
- **Family history of pancreatitis.** The role of genetics is becoming increasingly recognized in chronic pancreatitis. If you have family members with the condition, your odds increase especially when combined with other risk factors.

### CLINICAL MANIFESTATIONS

Signs and symptoms of pancreatitis may vary, depending on which type you experience.

*Acute pancreatitis signs and symptoms include:*

- Upper abdominal pain
- Abdominal pain that radiates to your back
- Tenderness when touching the abdomen
- Fever
- Rapid pulse
- Nausea
- Vomiting

*Chronic pancreatitis signs and symptoms include:*

- Upper abdominal pain
- Abdominal pain that feels worse after eating
- Losing weight without trying
- Oily, smelly stools (steatorrhea)

### DIAGNOSTIC EVALUATION

Tests and procedures used to diagnose pancreatitis include:

- ❖ **Blood tests:** to look for elevated levels of pancreatic enzymes, along with white blood cells, kidney function and liver enzymes.
- ❖ **Abdominal ultrasound:** to look for gallstones and pancreas inflammation.
- ❖ **Computerized tomography (CT) scan:** to look for gallstones and assess the extent of pancreas inflammation
- ❖ **Magnetic resonance imaging (MRI):** to look for abnormalities in the gallbladder, pancreas and ducts
- ❖ **Endoscopic ultrasound:** to look for inflammation and blockages in the pancreatic duct or bile duct
- ❖ **Stool tests:** in chronic pancreatitis to measure levels of fat that could suggest your digestive system isn't absorbing nutrients adequately.

## COMPLICATIONS

*Pancreatitis can cause serious complications, including:*

- ❖ **Kidney failure:** Acute pancreatitis may cause kidney failure, which can be treated with dialysis if the kidney failure is severe and persistent.
- ❖ **Breathing problems:** Acute pancreatitis can cause chemical changes in your body that affect your lung function, causing the level of oxygen in your blood to fall to dangerously low levels.
- ❖ **Infection:** Acute pancreatitis can make your pancreas vulnerable to bacteria and infection. Pancreatic infections are serious and require intensive treatment, such as surgery to remove the infected tissue.
- ❖ **Pseudocyst:** Acute pancreatitis can cause fluid and debris to collect in cystlike pockets in your pancreas. A large pseudocyst that ruptures can cause complications such as internal bleeding and infection.
- ❖ **Malnutrition:** Both acute and chronic pancreatitis can cause your pancreas to produce fewer of the enzymes that are needed to break down and process nutrients from the food you eat. This can lead to malnutrition, diarrhea and weight loss, even though you may

be eating the same foods or the same amount of food.

- ❖ **Diabetes:** Damage to insulin producing cells in your pancreas from chronic pancreatitis can lead to diabetes, a disease that affects the way your body uses blood sugar.
- ❖ **Pancreatic cancer:** Long standing inflammation in your pancreas caused by chronic pancreatitis is a risk factor for developing pancreatic cancer.

## MANAGEMENT

### *Treatment for acute pancreatitis*

- ❖ If patient have an attack of acute pancreatitis, you may receive strong drugs for pain. You may have to have your stomach drained with a tube placed through your nose. If the attack is prolonged, you may be fed and hydrated intravenously (through a vein).
- ❖ You'll probably need to stay in the hospital, where your treatment may include.
- ❖ Antibiotics therapy if your pancreas is infected.
- ❖ Intravenous (IV) fluids, given through a needle
- ❖ Low-fat diet or fasting. You might need to stop eating so your pancreas can recover. In this case, you'll get nutrition through a feeding tube.
- ❖ Painkiller medications to reduce the pain.
- ❖ If your case is more severe, your treatment might include.
- ❖ Endoscopic retrograde cholangiopancreatography (ERCP), a procedure that involves the insertion of a tube down your throat into the stomach and upper intestines to take out gallstones if they're blocking your bile or pancreatic ducts. A small cut is made to remove stones in the bile duct, or a plastic tube called a stent is inserted into the ducts to relieve the obstruction.
- ❖ Gallbladder surgery if gallstones caused your pancreatitis.
- ❖ Pancreas surgery to clean out fluid or dead or diseased tissue.

## Treatment for chronic pancreatitis

*Depending on your situation, chronic pancreatitis may require additional treatments, including:*

- ❖ **Pain management:** Chronic pancreatitis can cause persistent abdominal pain. Your doctor will evaluate you for causes of chronic pancreatitis and may recommend medications to control your pain. If necessary, you may be referred to a pain specialist.
- ❖ **Severe pain:** may be relieved with options such as endoscopic ultrasound or injections to block nerves that send pain signals from the pancreas to the brain.
- ❖ **Enzymes to improve digestion:** In chronic pancreatitis leading to diarrhea or weight loss, pancreatic enzyme supplements can help your body break down and process the nutrients in the foods you eat. Pancreatic enzymes are taken with each meal.
- ❖ **Changes to your diet:** Your doctor may refer you to a dietitian who can help you plan low-fat meals that are high in nutrients.

## PREVENTION

- ❖ **Stop drinking alcohol:** Even if alcohol was not deemed to be the cause of acute pancreatitis, it is prudent to stop drinking alcohol while recovering. If you're unable to stop drinking alcohol on your own, ask your doctor for help. Your doctor can refer you to local programs to help you stop drinking.
- ❖ **Stop smoking:** If you smoke, quit. If you don't smoke, don't start. If you can't quit

on your own, ask your doctor for help. Medications and counseling can help you quit smoking.

- ❖ **Choose a low-fat diet:** Choose a diet that limits fat and emphasizes fresh fruits and vegetables, whole grains, and lean protein.
- ❖ **Drink more fluids:** Pancreatitis can cause dehydration, so drink more fluids throughout the day. It may help to keep a water bottle or glass of water with you.

## CONCLUSIONS

The management of acute pancreatitis remains a formidable challenge and continues to evolve. Although specific treatments for acute pancreatitis remain elusive, progress has been made in the management of pain, fluid resuscitation, antibiotic prophylaxis, enteral nutrition, therapeutic ERCP, and cholecystectomy. Progress has also been made in the intensive care management of systemic complications and in the development of less invasive interventions for the treatment of local complications, particularly infected pancreatic necrosis. This chapter has highlighted the need for more evidence to guide decision making, quell persisting controversies, and reduce variations in practice, particularly in patients with severe and critical acute pancreatitis.

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