University Hospitals of Leicester
NHS Trust

A guide to the diagnosis and treatment of acute pancreatitis

Hepatobiliary and Pancreatic Services

Information for Patients

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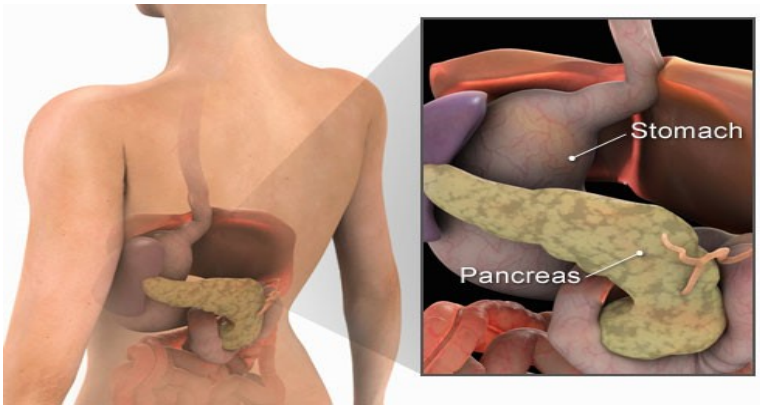
Introduction

You have had tests that show you have **acute pancreatitis**. This diagnosis is based on your symptoms (clinical history) and blood tests. You may also have had other tests.

Most people with acute pancreatitis get better in 2 to 3 days with no long-term effects. Some people (and it may be too early yet to tell in your case) may develop a more serious form called severe acute pancreatitis (SAP). This booklet is about this disease and what to expect.

About the pancreas

The pancreas is a spongy, leaf-shaped gland. It is about 6 inches long by 2 inches wide. It is found in the back of your tummy (abdomen). It lies behind the stomach and above the small intestine.

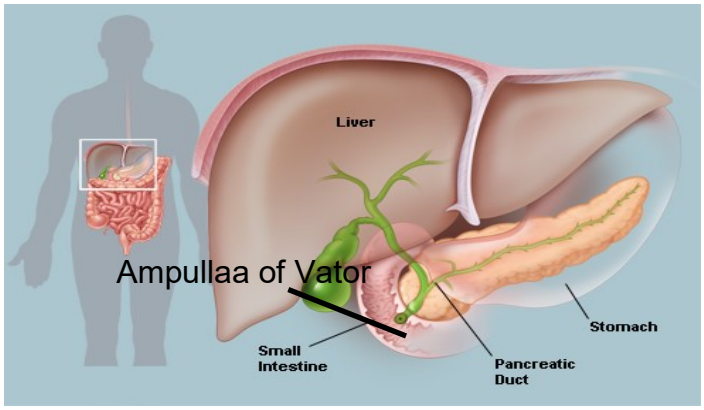


The pancreas is in 3 parts:

1. The head of the pancreas is surrounded by the first part of your small bowel (duodenum.)
2. The body lies behind your stomach
3. The tail lies next to your spleen.

The pancreatic duct runs the entire length of the pancreas. It empties digestive enzymes into the small intestine from a small opening called the ampulla of Vater.

2 major bile ducts come out of the liver. They join to become the common bile duct. The end of the common bile duct meets the pancreatic duct at the ampulla of Vater. It empties bile into the the first part of the small intestine (duodenum).



If a gallstone goes in the bile duct and stops the bile from emptying into the duodenum, you will become yellow (jaundiced) in colour. You may have itching.

What does the pancreas do?

The pancreas helps with digestion. It has 2 main jobs:

- to produce enzymes to digest food, mainly fats,
- to produce hormones (insulin) and glucagon) to help support your blood sugar control.

Severe acute pancreatitis can affect these.

What is pancreatitis?

Pancreatitis means swelling (inflammation) of the pancreas. Acute pancreatitis is a sudden start of inflammation.

Symptoms of acute pancreatitis:

- pain in the abdomen, which may go through to the back.
- being sick (vomiting) or feeling sick (nausea)
- feeling full.

You may also get a raised pulse rate, low blood pressure and a higher breathing rate.

Inflammation in the pancreas can spread quickly. It can cause a body-wide response called a “systemic inflammatory response.”

It is the main cause for some patients becoming very ill with acute pancreatitis. Mild pancreatitis will settle down after 2 or 3 days. Severe acute pancreatitis is very different. We will look at it in more detail later in this booklet.

When you are first admitted to hospital, it may not be clear if you have mild or severe acute pancreatitis. We will monitor you closely. We will make a diagnosis based on a number of different tests and observations during your stay in hospital.

Diagram shows the different types of acute pancreatitis

Acute versus chronic pancreatitis

Chronic pancreatitis is long-term. It can happen after one or more attacks of acute pancreatitis. It can also occur on its own. This booklet will not cover chronic pancreatitis in detail.

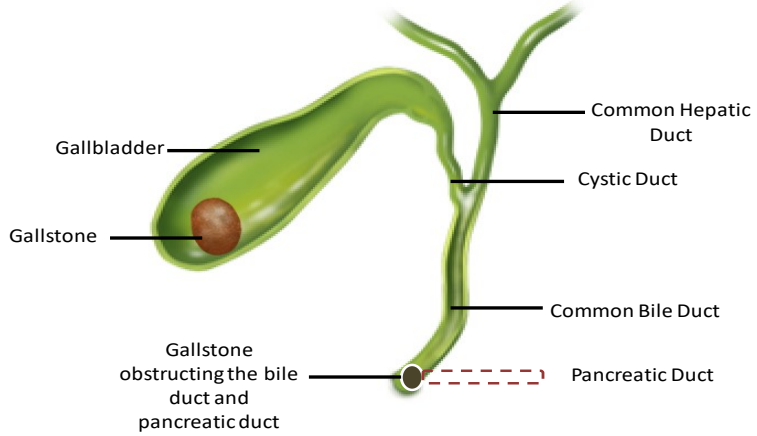
What causes pancreatitis?

The most common cause for acute pancreatitis is gallstones. Gallstones leave the gallbladder and enter the bile duct (a tube that connects the liver to the gut). The stone can then block the common bile duct. This is the part of the bile duct that joins the duct which drains the pancreas. This blockage can sometimes trigger acute pancreatitis.

1. Gallstones causing pancreatitis will often cause yellowing of the skin (jaundice) as they also block the bile flow from the liver. This can be very obvious or may only be found in your blood tests.
2. Alcohol is thought to cause pancreatitis by allowing bile to come back up (reflux) into the pancreatic duct.
3. Other causes for acute pancreatitis are drugs, hereditary conditions, anatomical problems within the pancreas, small tumours within the pancreas, trauma (or surgery), conditions where the body attacks its own healthy cells (autoimmune diseases/auto immune pancreatitis), metabolic anomalies or it may happen after a procedure called an ERCP (discussed later in this booklet).

In about 20% of patients (1 in 5), the cause of their acute pancreatitis is never found.

Gall stone triggering acute pancreatitis

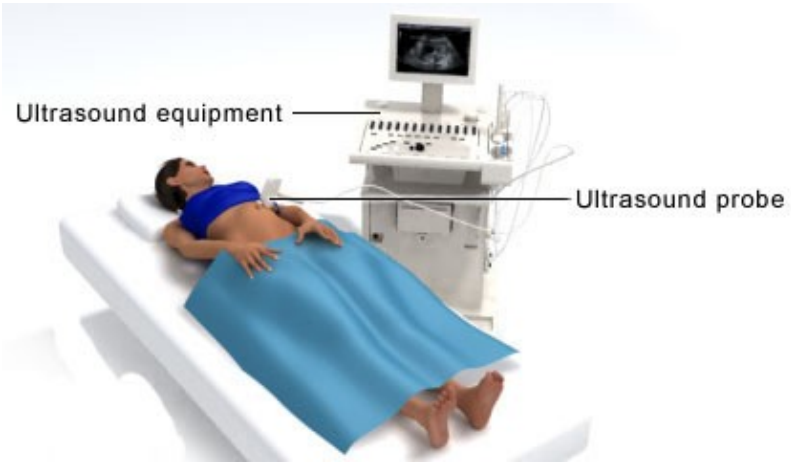


Tests for pancreatitis

Pancreatitis is diagnosed by taking a detailed history, physical examination and blood tests. You will have some, and possibly all, of these tests (investigations):

Blood tests: We will take blood to check your general health. It will often confirm the diagnosis of acute pancreatitis if your blood amylase (an enzyme produced by the pancreas) is raised (elevated).

Most patients will need an ultrasound scan of their abdomen to check for gallstones. If you had a recent scan for gallstones (for example in the 3 months before being admitted), it may not need to be repeated.



CT scan: Gives detailed pictures of the pancreas and other organs. Not everyone needs a CT scan. It confirms the diagnosis or assesses damage.

A machine shaped like a huge doughnut is used to take special X-rays. You will lie on a table inside the hole in the “doughnut”. The X-rays are taken as very thin slices through the area of the abdomen. Not everybody with pancreatitis needs a CT scan. It is done either to confirm the diagnosis or to assess the amount of damage to the pancreas caused by pancreatitis.

This damage is called **necrosis** or tissue that has died. Its presence and the amount of necrosis will be used to decide if you will need further treatment. Some patients with very severe pancreatitis may need several CT scans during their hospital stay.

MRI scan (magnetic resonance imaging): Uses a strong magnetic field to image the pancreas. You lie still inside a metal cylinder. It is open at both ends. The machines are large and make a noise. This can make some people feel isolated during the procedure. The whole test may take up to 1 hour. It is painless, but lying inside the cylinder may make you feel confined (claustrophobic).

The MRI scan is used to examine the bile ducts and see that there are no stones in them. If stones are seen on your MRI scan, you may need another procedure to remove them. This is called an ERCP.

Is pancreatitis dangerous?

Pancreatitis is very serious, especially if you have severe acute pancreatitis. The risk of death can be high, with up to 10% (1 in 10) people dying from pancreatitis. For severe acute pancreatitis, the risk can be as high as 50% (1 in 2).

How is pancreatitis treated?

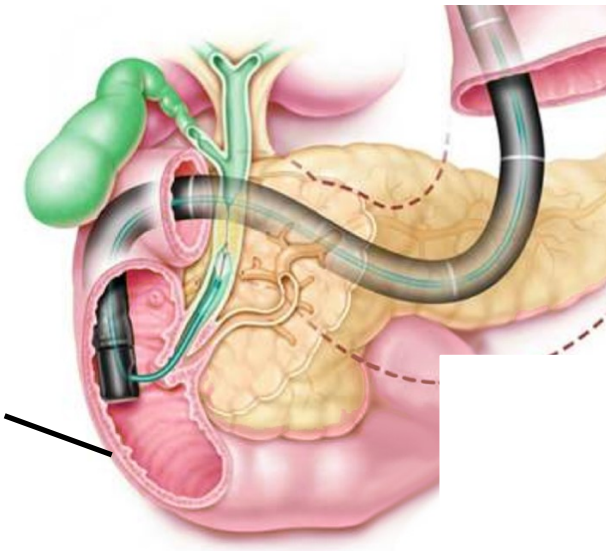
There is no specific cure for pancreatitis. The management of the condition involves

- giving fluids into the veins (intravenous),
- careful monitoring
- sometimes the use of antibiotics.

Patients with severe acute pancreatitis sometimes may need to be in the intensive care unit. Patients can have problems with blood pressure, breathing, kidney or other organs. These issues occur because of the body-wide effect that severe acute pancreatitis can have.

Sometimes, treatment is needed to treat specific problems linked to pancreatitis or to prevent future attacks.

- **Endoscopic Retrograde cholangio-pancreatography (ERCP):** This is an endoscopic procedure done under light sedation. It is mainly done to treat stones in the duct or narrowing of the bile duct. The HPB unit in Leicester does over 1000 ERCPs every year. ERCP is safe but all procedures have risks. ERCP can sometimes cause another attack of pancreatitis or can result in bleeding. ERCP is often done before gall bladder surgery to clear any stones in the bile duct. It might be used on its own for patients who are not fit enough for surgery to prevent further attacks of pancreatitis (if gallstones were the cause).



Scope used to do an ERCP

- **Cholecystectomy:** Surgery to remove the gall bladder can prevent future attacks of pancreatitis caused by gallstones. It can be done as a keyhole procedure or with a larger cut. Surgery is usually done during the first hospital stay or soon after. For most patients, it is sensible to have gall bladder surgery as soon as possible. For some patients with more severe forms of pancreatitis it may be better for them to delay their surgery until they have fully recovered from their attack. There is good evidence that early surgery may be harmful in patients with severe acute pancreatitis.
- **Drainage of pancreatic collections:** In the later stages of their disease, it is not uncommon for patients to develop fluid collections around their pancreas. Fluid collections around the pancreas can cause problems with eating, pain, or infection. They may need to be drained using a special tube (an EUS) through the skin or into the stomach. It is similar to an ERCP: a telescope will be passed through the stomach and a special tube called a “stent” will be pushed through the stomach wall into the fluid collection.

Surgery for acute pancreatitis:

Surgery is not recommended for acute pancreatitis. Sometimes bypass operations are needed to let patients eat and drink normally. The stomach is "re-plumbed" to let food enter the gut normally. This can be done as a keyhole or open procedure which will need a larger cut (incision) to do the surgery. Surgery may be need to treat problems caused by pancreatitis such as bleeding or a hole (perforation) in the gut.

Removing dead, infected pancreatic tissue is a major procedure with high risks. It is rarely done in the first 4 weeks of an attack. It has very high death rate and complication rate (about 50%). Your clinical team will decide if this is needed based on CT scan pictures and your overall condition. If this surgery (called a necrosectomy) is needed, it is very common to need more than one procedure as it is not always possible to remove all infected tissue in one go.

What are the complications of pancreatitis?

Pancreatitis is a very complex disease. It can have many short and long-term effects as a result of the illness. The following list not exhaustive.

- **Organ failure:** Acute pancreatitis can cause problems not just in the pancreas but also in other organs of the body, such as the lungs, kidneys and heart. Organ failure may mean that the clinical team decides that you need to be in intensive care.
- **Pseudocysts:** These are collections of fluid around the pancreas. Normally, these fluid collections resolve without treatment. They may need to be drained if they cause symptoms (such as difficulty eating, jaundice or bleeding) they may need to be drained.
- **Portal vein thrombosis:** The portal vein is an important blood vessel which runs behind the pancreas. A clot can form in this vein because of the inflammation around the pancreas. This is treated in the same way as clots in leg veins are treated. You need to take 6 months of a blood thinning agent, such as warfarin.
- **Bleeding:** This is a rare but a very serious problem. It usually occurs because of erosion which leads to the thinning of the walls of blood vessels around the pancreas. This will need emergency treatment using "radiological embolisation" or potential surgery. Radiological embolisation is done by a specialist doctor called a radiologist. They feed specialised wires through blood vessels in the groin. These travel up to the blood vessels near the pancreas. Once the tubes are in place, the radiologist is able to inject special material to clog any vessels which are bleeding.
- **Gastric outlet obstruction:** The outlet to the stomach can be blocked by inflammation or by fluid collections around the pancreas. This can be treated by a short period of feeding directly into a vein or by surgery to bypass the blockage.
- **Bile duct stricture:** The scarring caused by acute pancreatitis may be so severe that the bile duct becomes narrowed and you may become jaundiced. You might need treatment with ERCP or with surgery.
- **Gut ischaemia:** The changes around the pancreas may be so severe that it can affect the

blood supply to other organs in your abdomen. You may need surgery.

- **Pancreatic fistula and ascites:** If the pancreas is damaged the ducts which drain the pancreas may also become damaged. This can lead to fluid building up inside your abdomen or if a drain has been inserted, forming a track to the wall of the tummy (called a fistula).
- **Chronic pancreatitis:** Longer term effects from acute pancreatitis can result in permanent scarring within the pancreas leading to long term pain. This may mean that you need to see pain control specialists.
- **Malabsorption:** The damage to the pancreas may be so severe that it cannot provide your body with sufficient enzymes needed to digest your food. This can result in weight loss, bloating and foul-smelling poo (stools). This can be corrected by taking capsules containing replacement enzymes, such as Creon™.
- **Diabetes:** A severe attack of pancreatitis can damage the pancreas and result in diabetes. This may need to be treated with diet, tablets or even insulin.

Nutrition in acute pancreatitis

Eating and drinking enough both during and after pancreatitis is very important. Whilst the body can tolerate up to 7 to 10 days without food, your clinical team will advise you about your diet and food intake.

Nutrition can be provided in the following ways:

- **Oral diet:** The best and safest way to get nutrition is to eat and drink normally. You may need to be kept 'nil by mouth' for certain procedures or tests. If you are able to eat you will be encouraged to do so. Sometimes you need nourishing drinks to supplement your intake.
- **NG (naso-gastric) feeding:** A small tube may be passed through your nose into your stomach to give you a continuous drip of nourishing feed if you cannot eat enough
- **TPN or Intravenous feeding:** In severe pancreatitis, the gut may not always work as normal. In this case, it may be impossible to provide enough calories into the gut. You may need intravenous feeding.

Going home after acute pancreatitis

Once you have recovered enough from your pancreatitis, it may be possible to discharge you home. It is very common to have on-going problems at home.

- **Fatigue:** You should expect to feel tired. You may need a nap during the day, but try to stay out of bed as much as possible so you will sleep at night. It usually takes 6 to 12 weeks until your energy levels return to normal.
- **Loss of appetite:** It is common to have a loss of appetite. Try eating smaller meals containing each of the 4 food groups (fruits/vegetables, meat/chicken/fish, breads/grains and

dairy products). If you begin to be sick (vomit) large amounts of undigested fluid, you will need to get advice.

- **Alcohol:** Alcohol is an important trigger of acute pancreatitis. If alcohol was the cause you should avoid it completely for good. You may need help from your GP or the Alcohol Liaison Team. We can refer you to them. If gallstones were the cause, it would still be sensible to avoid alcohol for a period.
- **Pain:** You may still have pain at home, and need painkillers. Some painkillers cause constipation. Have extra fluids and fibre in your diet. Take the pain relief as directed by your doctor. If your pain is getting worse or is linked with other symptoms such as being sick (vomiting), jaundice, temperature or shivering you will need to get medical advice.
- **Further follow-up:** Many patients with severe acute pancreatitis need to see a pancreatic specialist again. You may also need for further scans to check your pancreas. Your clinical team will tell you if you need this.
- **Readmission:** Pancreatitis is a complex and unpredictable disease. You will not be discharged until the clinical team feel the time is right. If your pancreatitis gets worse or changes whilst you are at home you may need to be readmitted. Please contact your GP or the Nurse Specialist, if you feel that you struggling with:
  - eating
  - amount you are drinking (fluid intake)
  - being sick (vomiting)
  - excessive pain
  - jaundice
  - weight loss

Contact details

If you have any questions please call the switchboard on 0300 303 1573 and ask for the Hepatobiliary and Pancreatic Service

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