

A guide to the diagnosis and treatment of acute pancreatitis

Hepatobiliary Services
Information for patients



University Hospitals of Leicester



NHS Trust

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Introduction

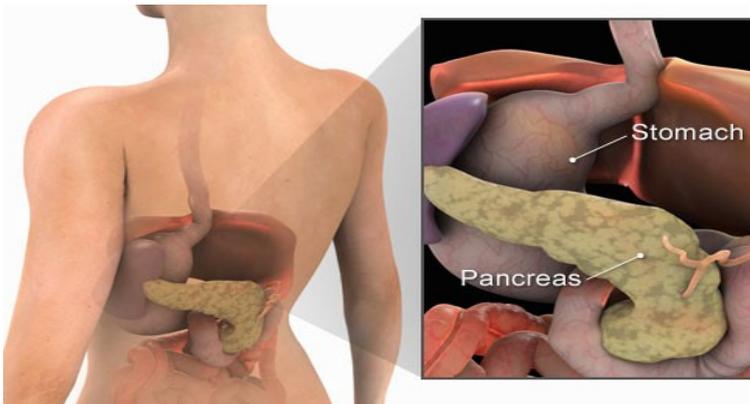
The tests that you have had so far have shown that you have developed a condition called **acute pancreatitis**. This diagnosis has been made based on your clinical history (what you have told us about your symptoms) and blood tests. You may also have had other tests that have helped us to make this diagnosis.

For the vast majority of people, acute pancreatitis is a condition which resolves completely after two to three days with no long-term effects. However, for some people (and it may be too early yet to tell in your case) a more severe form of the disease develops called severe acute pancreatitis (SAP). This booklet aims to tell you and your family more about this disease and what you should expect from this complicated condition.

About the pancreas

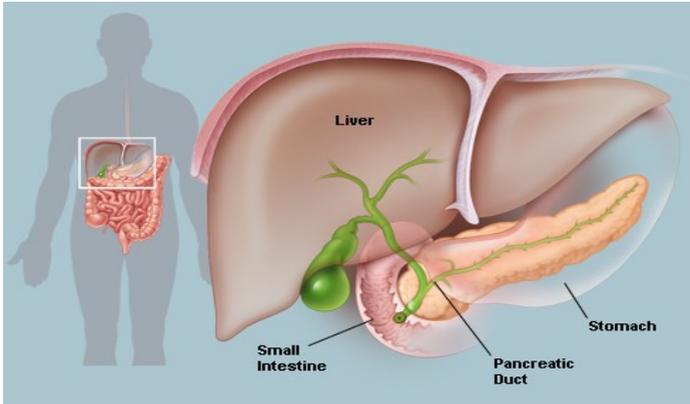
The pancreas is a spongy, leaf-shaped gland, approximately six inches long by two inches wide, located in the back of your abdomen. It lies behind the stomach and above the small intestine.

The pancreas is divided into three parts: the head, the body and the tail. The head of the pancreas is surrounded by the duodenum. The body lies behind your stomach, and the tail lies next to your spleen. The pancreatic duct runs the entire length of the pancreas and it empties digestive enzymes into the small intestine from a small opening called the ampulla of Vater.



About the pancreas (continued)

Two major bile ducts come out of the liver and join to become the common bile duct. The end of the common bile duct meets the pancreatic duct at the ampulla of Vater and empties bile into the duodenum.



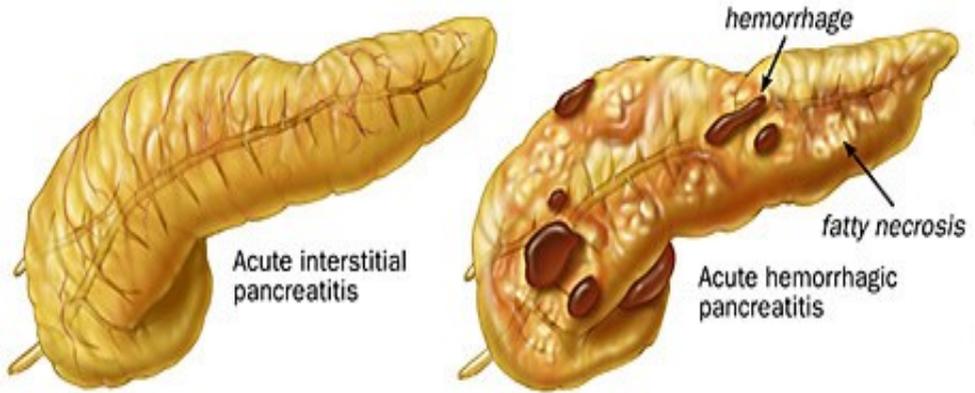
If a gallstone enters the bile duct and stops the bile from emptying into the duodenum, you will become jaundiced or yellow in colour and you may have itching.

Function

The major function of the pancreas is to secrete hormones and enzymes. It secretes the hormones insulin and glucagon, which both regulate blood sugar levels. Pancreatic enzymes help in digestion, especially in fat digestion. Both of these functions may be affected by severe acute pancreatitis.

What is pancreatitis?

Pancreatitis means inflammation of the pancreas. Acute pancreatitis is a sudden onset of inflammation which typically presents with pain in the abdomen, which may go through to the back. This pain is often accompanied by vomiting and a feeling of fullness. You may also get a raised pulse rate, low blood pressure and a raised respiratory rate.



Inflammation in the pancreas can rapidly spread and cause a body-wide response. This is known as a **systemic inflammatory response** and it is the main cause for some patients becoming very ill with acute pancreatitis. Mild pancreatitis will rapidly settle down after two or three days. However, severe acute pancreatitis is very different and will be discussed in more detail later in this booklet.

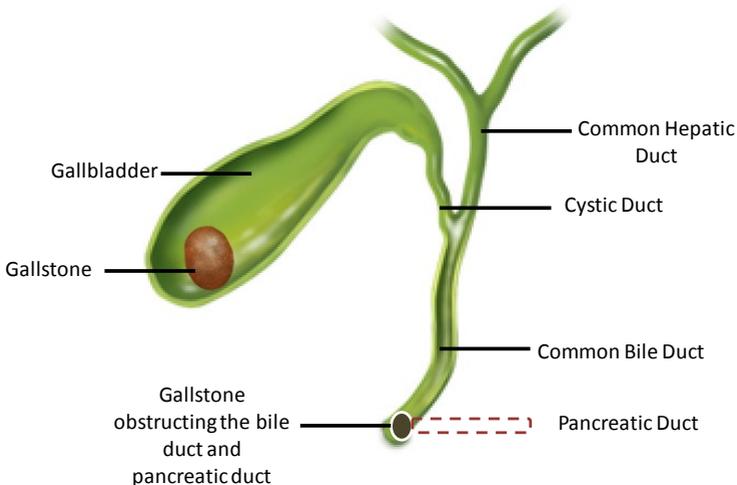
When you are first admitted to hospital, it may not be immediately obvious which form of pancreatitis (mild or severe acute) you have. We will monitor you closely and the diagnosis will be made based on a number of different tests and observations during your stay in hospital.

Acute versus chronic pancreatitis

Chronic pancreatitis is the result of one (or multiple) previous attacks of acute pancreatitis. Chronic and acute pancreatitis may be present at the same time, but generally the inflammatory response in chronic pancreatitis is much less and therefore the degree of monitoring required is not always as intensive as that for acute pancreatitis. Whilst chronic pancreatitis is a severe disease in its own right, it will not be discussed in detail in this booklet

What causes pancreatitis?

The most common cause for acute pancreatitis is gallstones. Gallstones can cause pancreatitis when a stone escapes from the gallbladder and enters the bile duct. Once in the bile duct it may obstruct the common bile duct, which is the part of the bile duct that joins the duct which drains the pancreas. This blockage causes back pressure on the pancreas and is thought to trigger acute



What causes pancreatitis? (continued)

Gallstones causing pancreatitis will often cause jaundice as well (a yellowing of the skin) as they also obstruct the bile flow from the liver. This can be very obvious or may only be detected in your blood tests.

The second most common cause of pancreatitis is alcohol. Alcohol is thought to cause pancreatitis by allowing bile to reflux up into the pancreatic duct and hence trigger an attack.

Other causes for acute pancreatitis are drugs, hereditary conditions, anatomical problems within the pancreas, small tumours within the pancreas, trauma (or surgery), autoimmune diseases (a condition where the body attacks itself), metabolic anomalies or it may happen after a procedure called an ERCP (discussed later in this booklet).

In about 20% of patients (one in five), the cause of their acute pancreatitis is never discovered.

Investigations for pancreatitis

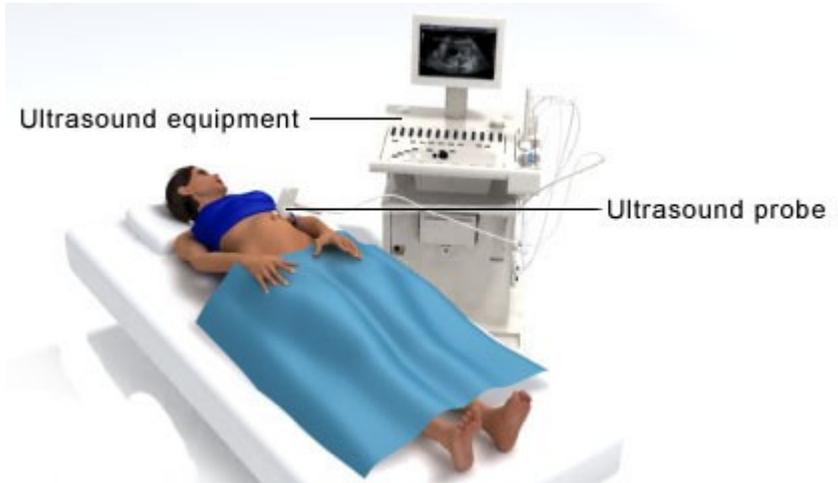
Diagnosis is often made following a detailed history, thorough physical examination and blood tests.

You will have some, and possibly all, of these investigations:

Blood tests: blood tests will be taken to check your general health and will often also confirm the diagnosis of acute pancreatitis if your blood amylase (an enzyme produced by the pancreas) is elevated.

Ultrasound: Nearly all patients with acute pancreatitis will need an ultrasound scan of their abdomen to see if they have gallstones. If a scan looking for gallstones has been done very recently (for example in the three months before being admitted), it may not be necessary to repeat it.

Investigations for pancreatitis (continued)



CT scan: This is more complex and time-consuming than an ultrasound but can produce excellent pictures of the pancreas and other organs in your abdomen.



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.

Investigations for pancreatitis (continued)

This damage is called **necrosis** and its presence and the amount of necrosis will be used to decide whether you will require further treatment. Some patients with very severe pancreatitis may require several CT scans during their hospital admission.

MRI Scan (Magnetic Resonance Imaging): An MRI scan is similar to a CT scan, but uses a very strong magnetic field to image the pancreas instead of X-rays.



During the test you will be asked to lie very still on a couch inside a metal cylinder, which is open at both ends. The machines are large and make a noise, which can make some people feel isolated during the procedure. The whole test may take up to an hour. It is completely painless, but lying inside the cylinder may make you feel claustrophobic.

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

Is pancreatitis dangerous?

Pancreatitis is a very serious condition, particularly in those with severe acute pancreatitis. Whilst it is important to appreciate that the risk of death covers a wide range of individuals; the overall death rate from pancreatitis can be as high as 10% (one in ten). For patients with severe acute pancreatitis, this risk can rise to 50% (one in two).

What is the treatment for pancreatitis?

There is no specific cure for pancreatitis and the management of the condition involves intravenous fluids, careful monitoring and occasionally the use of antibiotics.

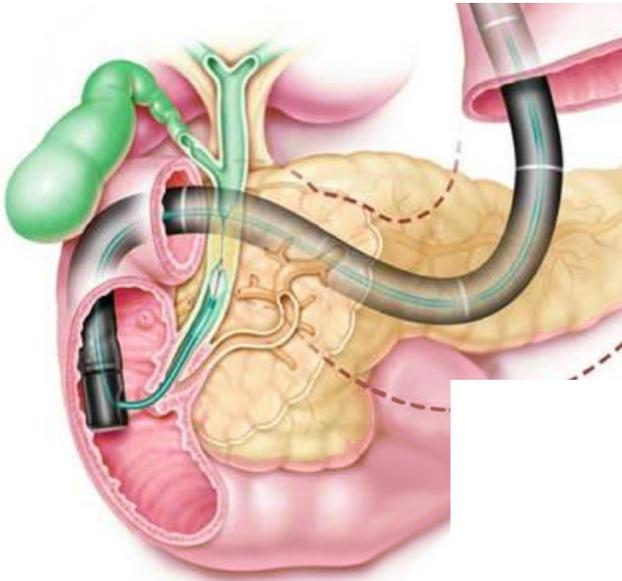
Patients with severe acute pancreatitis sometimes require intensive nursing on the intensive care unit. This is because patients can develop problems with maintaining blood pressure, breathing problems, kidney problems or specific problems with other organs. These issues occur because of the body-wide impact that severe acute pancreatitis can have.

Sometimes treatment is required to treat specific problems associated with pancreatitis or to prevent future attacks.

Endoscopic Retrograde Cholangio-Pancreatography (ERCP):

This is an endoscopic procedure performed under light sedation which is primarily used to treat stones in the bile duct or to treat narrowing of the bile duct caused by pancreatitis. The HPB unit in Leicester performs over 1000 ERCPs every year. Normally, the procedure is very safe but problems can occur, including triggering another attack of pancreatitis.

What is the treatment for pancreatitis? (continued)



ERCP is often performed 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).

Cholecystectomy: The best way of preventing future attacks of pancreatitis caused by gall stones is to have surgery to remove the gall bladder. This can often be performed as a key hole procedure but sometimes a big cut is required. Most patients will have this operation either on their initial admission to hospital or as soon as possible afterwards. For most patients, it is sensible to have gall bladder surgery as soon as possible. However, some patients with more severe forms of pancreatitis may benefit from having their surgery delayed until they have fully recovered from their attack. There is good evidence that early surgery may be detrimental in patients with severe acute pancreatitis.

What is the treatment for pancreatitis? (continued)

Drainage of pancreatic collections:

In the later stages of their disease, it is not uncommon for patients to develop fluid collections around their pancreas. These fluid collections can cause problems with eating. They can also cause pain or can become infected. It is sometimes necessary to drain them. This can be done by passing a special tube through the skin into the fluid collection or they can be drained into the stomach internally. A special endoscope called an EUS can be used for this. The procedure 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:

As a general rule, surgery is not recommended for acute pancreatitis. Sometimes bypass operations are required to allow patients to eat and drink normally. These operations involve “re-plumbing” the stomach to allow food to enter the gut normally. This can be done as a keyhole or open procedure. Other operations are occasionally needed to treat problems that the pancreatitis has caused elsewhere, such as bleeding or a perforation (hole) in the gut.

Surgery is sometimes needed to remove dead, infected pancreatic tissue. This operation can be performed as a keyhole or open procedure. It is a major procedure with a very high death rate and complication rate (approaching 50%). Your clinical team will decide if this is required based on CT scan pictures and your overall condition. It is very rare to have this surgery within the first four weeks of an attack of acute pancreatitis. Your clinical team will discuss this with you in detail if it is needed. If this surgery (called a necrosectomy) is required, 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 and can have many short and long-term effects as a result of the illness. The following list not exhaustive.

Organ failure: As discussed previously, 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 intensive care is required for further management.

Pseudocysts: These are collections of fluid around the pancreas. Normally, these fluid collections resolve without treatment. However, if they are persistent or 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; with six months of a blood thinning agent, such as warfarin.

Bleeding: This is a rare but very serious problem and usually occurs because of erosion of the walls of blood vessels around the pancreas. This will require emergency radiological or surgical treatment.

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 intravenous feeding or by surgery to bypass the blockage.

What are the complications of pancreatitis? (continued)

Bile duct stricture: The scarring caused by acute pancreatitis may be so severe that the bile duct becomes narrowed and you may become jaundiced. This might require 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. This can require surgery to correct .

Pancreatic fistula and ascites: If the pancreas is damaged the ducts which drain the pancreas may also become damaged, resulting in 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 chronic pain, which may mean that referral to pain control specialists is required.

Malabsorption: The damage to the pancreas may be so severe that it cannot provide your body with sufficient enzymes required to digest your food. This can result in weight loss, bloating and foul-smelling motions. This can be corrected by taking capsules containing replacement enzymes, such as CreonTM.

Diabetes: A sufficiently severe attack of pancreatitis can damage the pancreas to the extent that it results in diabetes. This may need to be treated with diet, tablets or even insulin.

Nutrition in acute pancreatitis

Maintaining adequate nutrition both during and after pancreatitis is essential. Whilst the body can tolerate up to seven to ten days without food, your clinical team will advise you regarding your diet and food intake.

Nutrition can be provided in the following ways:

Oral diet: The best and safest way of ensuring enough nutrition is to eat and drink normally. You may need to be kept 'nil by mouth' for certain procedures or investigations, but if you are able to eat you will be encouraged to do so. Sometimes nourishing drinks are also required to supplement your intake.

NG (naso-gastric) feeding: Occasionally it may be necessary to pass a small, flexible tube through the nose into the stomach or beyond. A continuous drip of nourishing feed can be delivered down this tube. This may be required if you are unable to eat enough via the normal route.

TPN or Intravenous Feeding: In severe pancreatitis in particular, the gut may not always work as normal. In this circumstance it may be impossible to provide enough calories into the gut and intravenous feeding may be required.

Going home after acute pancreatitis

Once you have sufficiently recovered from your pancreatitis, it may be possible to discharge you home. However, it is very common to experience 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 six to twelve weeks until your energy levels return to normal.

Decreased appetite: It is common to have a decreased appetite. Try eating smaller meals containing each of the four food groups (fruits/vegetables, meat/chicken/fish, breads/grains and dairy products). If you begin to vomit large amounts of undigested food, you will need to seek advice.

Alcohol: Alcohol is an important trigger of acute pancreatitis and if alcohol was the cause of your attack you should avoid it completely for good. This may require help from your GP or the Alcohol Liaison Team, which the clinical team can refer you to. If gallstones were the cause of your pancreatitis, it would still be sensible to avoid alcohol for a period.

Pain: At home, you may still have pain, and it may be necessary to take some painkillers. Please remember that some painkillers cause constipation so take extra fluids and fibre in your diet. Also remember to take the pain relief as directed by your doctor. If your pain is getting worse or is associated with other symptoms such as vomiting, jaundice, temperature or shivering you will need to seek medical advice.

Going home after acute pancreatitis (continued)

Further follow-up: Many patients with severe acute pancreatitis will need to be seen again in clinic by a pancreatic specialist. There may also be a need for further scans as an out-patient to track the changes within the pancreas and ensure they are improving. Your clinical team will tell you if this is necessary.

Readmission: Pancreatitis is a complex and unpredictable disease. The clinical team will not discharge unless they feel it is appropriate, however, further progression of your pancreatitis whilst at home may require you to be re-admitted. Please contact your GP or the Nurse Specialist, if you feel that you struggling with:

- eating
- fluid intake
- vomiting
- excessive pain
- jaundice
- weight loss

Research

Research continues throughout the world on the causes, treatments and prevention of pancreatitis

Within the Hepatobiliary Unit at the Leicester General Hospital, there are a number of research projects currently underway.

Your consultant surgeon or research fellow will ask you if you would like to be involved in any of these projects. There is no obligation to take part, but if you are interested your surgeon or clinical nurse specialist will be happy to give you more information.

If you would like this information in another language or format, please contact the service equality manager on 0116 250 2959

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