Pancreatitis: diagnosis and management

NICE guideline: short version

Draft for consultation, March 2018

This guideline covers the identification and management of pancreatitis. It includes recommendations on pain relief, nutrition support and managing complications, including referral where needed. In addition, it aims to ensure that people get timely information once they have been diagnosed.

Who is it for?

- Healthcare professionals
- Commissioners
- Children, young people and adults with acute or chronic pancreatitis, their families and carers

This version of the guideline contains the draft recommendations, context and recommendations for research. Information about how the guideline was developed is on the guideline's page on the NICE website. This includes the guideline committee's discussion and the evidence reviews (in the full guideline), the scope, and details of the committee and any declarations of interest.

Contents

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 Information and support

1.1.1 Give people with pancreatitis, and their family members or carers (as appropriate), written and verbal information on the following, where relevant, as soon as possible after diagnosis:

- pancreatitis and any proposed investigations and procedures, using diagrams
- hereditary pancreatitis, and pancreatitis in children, including specific information on genetic counselling, genetic testing, risk to other family members and advice on life insurance and travel
- the long-term effects of pancreatitis, including effects on the person's quality of life
- the harm caused to the pancreas by smoking or alcohol.

1.1.2 Advise people with pancreatitis where they might find reliable high-quality information and support after consultations, from sources such as national and local support groups, networks and information services.

1.1.3 Give people with pancreatitis, and their family members or carers (as appropriate), written and verbal information on the following about management of pancreatitis when applicable:

- why a person may be going through a phase where no treatment is given
- that pancreatitis is managed by a multidisciplinary team
- the multidisciplinary treatment of pain, including how to access the local pain team and types of pain relief
- nutrition advice, including advice on how to take enzyme replacement therapy if needed
- follow-up and who to contact for relevant advice, including advice needed during episodes of acute illness
- psychological care if needed, where available (see the NICE guideline on depression in adults)
- pancreatitis services, including the role of specialist centres, for people with acute, chronic or hereditary pancreatitis
- welfare benefits, education and employment support, and disability services

1.1.4 For more guidance on giving information, including providing an individualised approach, see the NICE guideline on patient experience in adult NHS services).

1.1.5 Explain to people with severe acute pancreatitis, and their family members and carers (as appropriate), that:

- a hospital stay lasting several months is relatively common, including time in critical care
- people who have started to make a recovery may have a relapse
- although children rarely die from acute pancreatitis, approximately 15-20% of adults with severe acute pancreatitis die in hospital.

1.1.6 Ensure that people with pancreatitis have the opportunity to record or take notes at clinic appointments and ward rounds.

1.1.7 Tell adults with pancreatitis that NICE has published a guideline on patient experience in adult NHS services that will show them what they can expect about their care.

Lifestyle: Alcohol

1.1.8 Advise people with pancreatitis caused by alcohol to stop drinking alcohol.

1.1.9 Advise people with recurrent acute or chronic pancreatitis that is not alcohol-related that alcohol might exacerbate their pancreatitis.

1.1.10 For guidance on alcohol use disorders, see the NICE guideline on the diagnosis and management of alcohol use disorders.

Lifestyle: Smoking cessation

1.1.11 For guidance on stopping smoking, see the NICE guideline on stop smoking services.

1.2 Diagnosis of chronic pancreatitis

This guideline assumes that people with suspected chronic pancreatitis will already have been investigated using CT scan, ultrasound scan or upper gastrointestinal endoscopy to determine a cause for their symptoms. We have made a research recommendation on the most accurate diagnostic test to identify whether chronic pancreatitis is present in the absence of a clear diagnosis following these tests.

1.3 Identifying the cause

Acute pancreatitis

1.3.1 Do not assume that a person's acute pancreatitis is alcohol-related just because they drink alcohol.

1.3.2 If gallstones and alcohol have been excluded as potential causes of a person’s acute pancreatitis, investigate other possible causes such as:

- metabolic causes (such as hypercalcaemia or hyperlipidaemia)
- prescription drugs
- microlithiasis
- hereditary causes
- autoimmune pancreatitis
- ampullary or pancreatic tumours
- anatomical anomalies (pancreas divisum).

Chronic pancreatitis

1.3.3 Do not assume that a person's chronic pancreatitis is alcohol-related just because they drink alcohol. Other causes include:

- genetic factors
- autoimmune disease, in particular IgG4 disease
- metabolic
- structural or anatomical.

1.4 Managing pancreatitis

Fluid resuscitation

1.4.1 For guidance on fluid resuscitation see the NICE guidelines on intravenous fluid therapy in adults in hospital and in children and young people in hospital.

Nutrition support for acute pancreatitis

1.4.2 Ensure that people with acute pancreatitis are not made 'nil-by-mouth' and do not have food withheld unless there is a clear reason for this (for example, vomiting).

1.4.3 Offer enteral nutrition to anyone with severe or moderately severe acute pancreatitis. Start within 72 hours of presentation and aim to meet their nutritional requirements as soon as possible.

1.4.4 Offer anyone with severe or moderately severe acute pancreatitis parenteral nutrition only if enteral nutrition has failed or is contraindicated.

Nutrition support for chronic pancreatitis

1.4.5 Be aware that all people with chronic pancreatitis are at high risk of malabsorption, malnutrition and a deterioration in their quality of life.

1.4.6 Use protocols agreed with the specialist pancreatic centre to identify when advice from a specialist dietitian is needed, including advice on food, supplements and long-term pancreatic enzyme replacement therapy, and when to start these interventions.

1.4.7 Consider assessment by a dietitian for anyone diagnosed with chronic pancreatitis.

1.4.8 For guidance on nutrition support for people with chronic alcohol-related pancreatitis, see alcohol-related pancreatitis in the NICE guideline on alcohol-use disorders.

Nutrition support for pancreatitis

1.4.9 For guidance on nutrition support see the NICE guidelines on nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition.

Antimicrobial prophylaxis

1.4.10 Do not offer prophylactic antimicrobials to people with acute pancreatitis.

Managing complications

Necrosis

1.4.11 Offer people with acute pancreatitis an endoscopic approach for managing infected or suspected infected pancreatic necrosis when anatomically possible .

1.4.12 Offer a percutaneous approach when an endoscopic approach is not anatomically possible.

1.4.13 Balance the need to debride infected pancreatic necrosis promptly against the advantages of delaying intervention.

Management of pain in people with chronic pancreatitis

1.4.14 For adults with neuropathic pain related to chronic pancreatitis, follow the recommendations in the NICE guideline on neuropathic pain in adults.

Pancreatic duct obstruction

1.4.15 Consider surgery (open or minimally invasive) as first line treatment in adults with painful chronic pancreatitis that is causing obstruction of the main pancreatic duct.

1.4.16 Consider extracorporeal shock wave lithotripsy for adults with pancreatic duct obstruction caused by a dominant stone if surgery is unsuitable.

Pseudocysts

1.4.17 Offer endoscopic ultrasound (EUS)-guided drainage, or endoscopic transpapillary drainage for pancreatic head pseudocysts, to people with symptomatic pseudocysts (for example those with pain, vomiting or weight loss).

1.4.18 Consider EUS-guided drainage, or endoscopic transpapillary drainage for pancreatic head pseudocysts, for people with non-symptomatic pseudocysts that meet 1 or more of the following criteria:

- are associated with pancreatic duct disruption
- are creating pressure on large vessels or the diaphragm
- are at risk of rupture
- there is suspicion of infection.

1.4.19 Consider surgical (laparoscopic or open) drainage of pseudocysts that need intervention if endoscopic therapy is unsuitable or has failed.

Pancreatic ascites and pleural effusion

1.4.20 Consider referring a person with pancreatic ascites and pleural effusion for management in a specialist pancreatic centre.

1.5 Referral for specialist treatment

1.5.1 If a person develops necrotic, infective, haemorrhagic or other local complications of acute pancreatitis:

- seek advice from a specialist pancreatic centre within the referral network **and**
- discuss whether to move the person to the specialist centre for treatment of the complications.

1.5.2 When managing acute pancreatitis in children:

- seek advice from a paediatric gastroenterology or hepatology unit and a specialist pancreatic centre **and**
- discuss whether to move the child to the specialist centre.

1.6 Follow-up investigation

Follow-up of pancreatic exocrine function in people with chronic pancreatitis

1.6.1 Offer people with chronic pancreatitis monitoring by clinical and biochemical assessment for pancreatic exocrine insufficiency and malnutrition every 12 months (every 6 months in under 16s), and adjust treatment of vitamin and mineral deficiencies accordingly.

1.6.2 Offer adults with chronic pancreatitis a bone density assessment every 24 months.

Follow-up to identify pancreatic cancer

1.6.3 Be aware that people with chronic pancreatitis have an increased risk of developing pancreatic cancer. The lifetime risk is highest, around 40%, in those with hereditary pancreatitis.

1.6.4 Consider annual monitoring for pancreatic cancer in people with hereditary pancreatitis.

Follow-up to identify diabetes

1.6.5 Be aware that people with chronic pancreatitis have a greatly increased risk of developing diabetes, with a lifetime risk as high as 80%. The risk increases with duration of pancreatitis and presence of calcific pancreatitis.

1.6.6 Offer people with chronic pancreatitis monitoring of HbA1c for diabetes at least every 6 months.

1.7 Type 3c diabetes

1.7.1 People with type 3c diabetes should be assessed every 6 months for potential benefit of insulin therapy.

1.7.2 For guidance on managing type 3c diabetes for people who are not using insulin therapy see the NICE guidelines on type 2 diabetes in adults and diagnosing and managing diabetes in children and young people.

1.7.3 For people with type 3c diabetes who require insulin, see the:

- recommendations on insulin therapy and insulin delivery in the NICE guideline on type 1 diabetes in adults
- recommendations on insulin therapy in the NICE guideline on diagnosing and managing diabetes in children and young people
- NICE technology appraisal on continuous subcutaneous insulin infusion for the treatment of diabetes mellitus.

1.7.4 For guidance on education and information for people with pancreatitis and type 3c diabetes requiring insulin, see the recommendations on education and information in the NICE guideline on diagnosing and managing type 1 diabetes in adults and education and information in the NICE guideline on diagnosing and managing diabetes in children and young people.

1.7.5 For guidance on self-monitoring blood glucose for people with pancreatitis and type 3c diabetes requiring insulin, see the recommendations on blood glucose management in the NICE guideline on diagnosing and managing type 1 diabetes in adults and blood glucose monitoring in the NICE guideline on diagnosing and managing diabetes in children and young people.

Terms used in this guideline

Type 3 c diabetes

Diabetes mellitus secondary to pancreatic disease. When this is associated with pancreatitis, the primary endocrine defect is insufficient insulin secretion (the abnormality in type 1 diabetes) rather than insulin resistance (characteristic of type 2 diabetes).

Moderately, severe acute pancreatitis

Moderately severe acute pancreatitis is characterised by organ failure is failure that resolves within 48 hours (transient organ failure) or local or systemic complications in the absence of persistent organ failure. As defined by the revised Atlanta Classification.

Severe acute pancreatitis

Severe acute pancreatitis is characterised by single or multiple organ failure that persists for more than 48 hours (persistent organ failure). As defined in the revised Atlanta Classification.

Putting this guideline into practice

NICE has produced tools and resources [link to tools and resources tab] to help you put this guideline into practice.

Some issues were highlighted that might need specific thought when implementing the recommendations. These were raised during the development of this guideline. They are:

- Models where local centres interact and collaborate with a regional specialist centre for acute pancreatitis are only currently established in some regions. Therefore, this model will need to be implemented across the country to enable the recommendations on specialist referral to be followed.
- Networks of dietitians and specialist dietitians need to be established to support the production and dissemination of protocols to identify when advice from a specialist dietitian is needed.

Putting recommendations into practice can take time. How long may vary from guideline to guideline, and depends on how much change in practice or services is needed. Implementing change is most effective when aligned with local priorities.

Changes recommended for clinical practice that can be done quickly – like changes in prescribing practice – should be shared quickly. This is because healthcare professionals should use guidelines to guide their work – as is required by

professional regulating bodies such as the General Medical and Nursing and Midwifery Councils.

Changes should be implemented as soon as possible, unless there is a good reason for not doing so (for example, if it would be better value for money if a package of recommendations were all implemented at once).

Different organisations may need different approaches to implementation, depending on their size and function. Sometimes individual practitioners may be able to respond to recommendations to improve their practice more quickly than large organisations.

Here are some pointers to help organisations put NICE guidelines into practice:

1. **Raise awareness** through routine communication channels, such as email or newsletters, regular meetings, internal staff briefings and other communications with all relevant partner organisations. Identify things staff can include in their own practice straight away.

2. **Identify a lead** with an interest in the topic to champion the guideline and motivate others to support its use and make service changes, and to find out any significant issues locally.

3. **Carry out a baseline assessment** against the recommendations to find out whether there are gaps in current service provision.

4. **Think about what data you need to measure improvement** and plan how you will collect it. You may want to work with other health and social care organisations and specialist groups to compare current practice with the recommendations. This may also help identify local issues that will slow or prevent implementation.

5. **Develop an action plan**, with the steps needed to put the guideline into practice, and make sure it is ready as soon as possible. Big, complex changes may take longer to implement, but some may be quick and easy to do. An action plan will help in both cases.

6. **For very big changes** include milestones and a business case, which will set out additional costs, savings and possible areas for disinvestment. A small project group

could develop the action plan. The group might include the guideline champion, a senior organisational sponsor, staff involved in the associated services, finance and information professionals.

7. **Implement the action plan** with oversight from the lead and the project group. Big projects may also need project management support.

8. **Review and monitor** how well the guideline is being implemented through the project group. Share progress with those involved in making improvements, as well as relevant boards and local partners.

NICE provides a comprehensive programme of support and resources to maximise uptake and use of evidence and guidance. See our into practice pages for more information.

Also see Leng G, Moore V, Abraham S, editors (2014) Achieving high quality care – practical experience from NICE. Chichester: Wiley.

Context

Acute pancreatitis

Acute pancreatitis is acute inflammation of the pancreas and is a common cause of acute abdominal pain. The incidence in the UK is approximately 56 cases per 100,000 people per year. Approximately 50% of cases are caused by gallstones, 25% by alcohol and 25% by other factors. In 25% of cases acute pancreatitis is severe and associated with complications such as respiratory or kidney failure, or the development of abdominal fluid collections. In these more severe cases people often need critical care and a prolonged hospital stay, and the mortality rate is 25%, giving an overall mortality rate in acute pancreatitis of approximately 5%.

Chronic pancreatitis

Chronic pancreatitis is a continuous prolonged inflammatory process of the pancreas that results in fibrosis, cyst formation and stricturing of the pancreatic duct. It usually presents with chronic abdominal pain but it may be painless. The clinical course is variable but most people with chronic pancreatitis have had 1 or more attacks of acute pancreatitis that has resulted in inflammatory change and fibrosis. In some

people, however, chronic pancreatitis has a more insidious onset. The intensity of pain can range from mild to severe, even in people with little evidence of pancreatic disease on imaging.

The annual incidence of chronic pancreatitis in western Europe is about 5 new cases per 100,000 people, although this is probably an underestimate. The male to female ratio is 7:1 and the average age of onset is between 36 and 55 years. Alcohol is responsible for 70–80% of cases of chronic pancreatitis. Although cigarette smoking is not thought to be a primary cause in itself, it is strongly associated with chronic pancreatitis and is thought to exacerbate the condition. Chronic pancreatitis may be idiopathic or, in about 5% of cases, caused by hereditary factors (in these cases there is usually a positive family history). Other causes include hypercalcaemia, hyperlipidaemia or autoimmune disease.

Chronic pancreatitis causes a significant reduction in pancreatic function and the majority of people have reduced exocrine (digestive) function and reduced endocrine function (diabetes). They usually need expert dietary advice and medication. Chronic pancreatitis can also give rise to specific complications including painful inflammatory mass and obstructed pancreatic duct, biliary or duodenal obstruction, haemorrhage, or accumulation of fluid in the abdomen (ascites) or chest (pleural effusion). Managing these complications may be difficult because of ongoing comorbidities and social problems such as alcohol or opiate dependence. Chronic pancreatitis significantly increases the risk of pancreatic cancer. This risk is much higher in people with hereditary pancreatitis.

More information

You can also see this guideline in the NICE pathway on [pathway title].

To find out what NICE has said on topics related to this guideline, see our web page on [developer to add and link topic page title or titles; editors can advise if needed].

[The following sentence is for post-consultation versions only – editor to update hyperlink with guideline number]See also the guideline committee's

discussion and the evidence reviews (in the full guideline), and information about how the guideline was developed, including details of the committee.

Recommendations for research

The guideline committee has made the following recommendations for research. The committee's full set of research recommendations is detailed in the full guideline.

1 Diagnosis of chronic pancreatitis

In people with suspected (or under investigation for) chronic pancreatitis, whose diagnosis has not been confirmed by the use of 'first-line' tests (for example, CT scan, ultrasound scan, upper gastrointestinal (GI) endoscopy or combinations of these), what is the most accurate diagnostic test to identify whether chronic pancreatitis is present?

Why this is important

People with chronic pancreatitis usually present with chronic abdominal pain. However, there are many other causes of chronic abdominal pain (for example, peptic ulcer disease, gallstone disease, gastric cancer, pancreatic cancer and abdominal aortic aneurysm). First-line tests to exclude these other causes include abdominal ultrasound, upper GI endoscopy and abdominal CT scan. Where the diagnosis has still not been confirmed following these first-line tests, it is important to have a clinical algorithm of specialist tests to be able to identify people with chronic pancreatitis. Appropriate management options can then be offered. A diagnostic cohort study is needed to determine the accuracy of magnetic resonance cholangiopancreatography (MRCP) with or without sectretin and endoscopic ultrasound in diagnosing chronic pancreatitis.

2 Speed of intravenous fluid resuscitation for people with acute pancreatitis

What is the most clinically effective and cost-effective speed of administration of intravenous fluid for resuscitation in people with acute pancreatitis?

Why this is important

There is clinical uncertainty about the optimal rate of fluid for resuscitation in severe acute pancreatitis. Severe acute pancreatitis causes the depletion of body fluids and reduction of the intravascular volume severe enough to cause hypotension, acute renal failure and pancreatic hypoperfusion aggravating the damage to the pancreas. In addition, there is conflicting evidence about the effect of aggressive or conservative fluid management on outcomes in other conditions with a pathophysiology.

Current guidelines recommend aggressive fluid therapy during the first 24 hours of hospital admission guided by central venous pressure monitoring or the intrathoracic blood volume index. The use of central venous pressure monitoring to guide fluid resuscitation has little evidence to support it. A randomised controlled trial is needed to determine whether aggressive rates of intravenous fluid administration for the initial period of fluid resuscitation are more clinically or cost-effective than conservative rates in people with acute pancreatitis.

3 Pain management: chronic pancreatitis

Is the long-term use of opioids more clinically effective and cost effective than non-opioid analgesia (including non-pharmacological analgesia) in people with chronic pain due to chronic pancreatitis?

Why this is important

Chronic pancreatitis is a complex condition needing biopsychosocial management. The pain is varied in nature, intensity, duration and severity, along with acute exacerbations. It is also multifactorial, making it difficult to have a standard regimen that can work for everyone. Some people also develop psychosocial factors such as reduction in quality of life, relationship issues, addiction to painkillers and financial difficulties.

Chronic pancreatitis is usually managed pharmacologically with a combination of opioids and other interventions. However, the use of opioids in managing chronic pancreatitis is known to cause serious side-effects – including tolerance, addiction, tiredness and constipation. These side-effects are frequently worse than the disease itself. Therefore, the whole rationale for the use of opioids in chronic pancreatitis is

questionable. A cohort study is needed to determine how effective long-term opioid use is in this population compared with non-opiate pain management strategies, including analgesia and psychological therapies.

4 Pain management: small duct disease

What is the most clinically effective and cost-effective intervention for managing small duct disease (in the absence of pancreatic duct obstruction, inflammatory mass or pseudocyst) in people with chronic pancreatitis presenting with pain?

Why this is important

People who have chronic pancreatitis with small duct disease are more difficult to treat than those without the disease because they do not have an anatomically correctable pancreatic abnormality – for example, pancreatic duct obstruction, inflammatory mass or pseudocysts. A randomised controlled trial study is needed to determine what the most effective intervention is for treating small duct disease. The following interventions should be compared with each other and with no treatment: surgery (partial resection, total resection with or without islet transplant, or drainage), endoscopic treatment, or standard care (for example, pharmacological treatment only, enzyme replacement therapy, nerve blocks).

5 Management of type 3c diabetes

What is the most clinically effective and cost-effective insulin regimen for type 3c diabetes secondary to pancreatitis?

Why this is important

Type 3c diabetes is associated with metabolic instability and risk of decompensation leading to severe hypoglycaemia and ketoacidosis, in addition to poor quality of life. However, there is no evidence available in this population to inform practice. Therefore, research specifically on type 3c diabetes is essential to inform future updates of key recommendations in this guideline. National adoption of evidence-based insulin management in type 3c diabetes has the potential to cost-effectively improve health and well-being, reducing the incidence of acute and long-term complications of poorly controlled glucose levels in chronic pancreatitis. A randomised controlled trial is needed to determine the most effective insulin therapy

regimen in this population, comparing twice daily insulin injections, an insulin analogue multiple daily dose basal bolus regimen, and insulin pump therapy.

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