NICE National Institute for Health and Care Excellence

NICE guideline

Pancreatic cancer in adults: diagnosis and management

NICE guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline replaces TA25.

This guideline is the basis of QS177.

This guideline should be read in conjunction with TA476.

Overview

This guideline covers diagnosing and managing pancreatic cancer in adults aged 18 and over. It aims to improve care by ensuring quicker and more accurate diagnosis, and by specifying the most effective treatments for people depending on how advanced their cancer is.

For recommendations on identifying pancreatic cancer in primary care, or when to refer people to a specialist, see the NICE guideline on recognition and referral for suspected cancer.

Who is it for?

- Healthcare professionals
- Commissioners and providers
- Adults aged 18 and over with pancreatic cancer, their families and carers

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about 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 Diagnosis

People with obstructive jaundice

1.1.1 For people with obstructive jaundice and suspected pancreatic cancer, offer a pancreatic protocol CT scan before draining the bile duct.

1.1.2 If the diagnosis is still unclear, offer fluorodeoxyglucose-positron emission tomography/CT (FDG-PET/CT) and/or endoscopic ultrasound (EUS) with EUS-guided tissue sampling.

1.1.3 Take a biliary brushing for cytology if:

- endoscopic retrograde cholangiopancreatography (ERCP) is being used to relieve the biliary obstruction **and**
- there is no tissue diagnosis.

People without jaundice who have pancreatic abnormalities on imaging

1.1.4 Offer a pancreatic protocol CT scan to people with pancreatic abnormalities but no jaundice.

1.1.5 If the diagnosis is still unclear, offer FDG-PET/CT and/or EUS with EUS-guided tissue sampling.

1.1.6 If cytological or histological samples are needed, offer EUS with EUS-guided tissue sampling.

People with pancreatic cysts

1.1.7 Offer a pancreatic protocol CT scan or magnetic resonance cholangiopancreatography (MRI/MRCP) to people with pancreatic cysts. If more information is needed after one of these tests, offer the other one.

1.1.8 Refer people with any of these high-risk features for resection:

- obstructive jaundice with cystic lesions in the head of the pancreas
- enhancing solid component in the cyst
- a main pancreatic duct that is 10 mm diameter or larger.

1.1.9 Offer EUS after CT and MRI/MRCP if more information on the likelihood of malignancy is needed, or if it is not clear whether surgery is needed.

1.1.10 Consider fine-needle aspiration during EUS if more information on the likelihood of malignancy is needed.

1.1.11 When using fine-needle aspiration, perform carcinoembryonic antigen (CEA) assay in addition to cytology if there is sufficient sample.

1.1.12 For people with cysts that are thought to be malignant, follow the recommendations on staging.

People with inherited high risk of pancreatic cancer

1.1.13 Ask people with pancreatic cancer if any of their first-degree relatives has had it. Address any concerns the person has about inherited risk.

1.1.14 Offer surveillance for pancreatic cancer to people with:

- hereditary pancreatitis and a PRSS1 mutation
- BRCA1, BRCA2, PALB2 or CDKN2A (p16) mutations, and one or more first-degree relatives with pancreatic cancer
- Peutz–Jeghers syndrome.

1.1.15 Consider surveillance for pancreatic cancer for people with:

- 2 or more first-degree relatives with pancreatic cancer, across 2 or more generations
- Lynch syndrome (mismatch repair gene [MLH1, MSH2, MSH6 or PMS2] mutations) and any first-degree relatives with pancreatic cancer.

1.1.16 Consider an MRI/MRCP or EUS for pancreatic cancer surveillance in people without hereditary pancreatitis.

1.1.17 Consider a pancreatic protocol CT scan for pancreatic cancer surveillance in people with hereditary pancreatitis and a PRSS1 mutation.

1.1.18 Do not offer EUS to detect pancreatic cancer in people with hereditary pancreatitis.

1.2 Specialist pancreatic multidisciplinary teams

1.2.1 A specialist pancreatic cancer multidisciplinary team should decide what care is needed, and involve the person with suspected or confirmed pancreatic cancer in the decision. Care should be delivered in partnership with local cancer units.

1.3 Staging

1.3.1 For people with newly diagnosed pancreatic cancer who have not had a pancreatic protocol CT scan, offer a pancreatic protocol CT scan that includes the chest, abdomen and pelvis.

1.3.2 Offer fluorodeoxyglucose-positron emission tomography/CT (FDG-PET/CT) to people with localised disease on CT who will be having cancer

treatment (surgery, radiotherapy or systemic therapy).

1.3.3 If more information is needed to decide the person's clinical management, consider one or more of the following:

- MRI, for suspected liver metastases
- endoscopic ultrasound, if more information is needed for tumour and node staging
- laparoscopy with laparoscopic ultrasound, for suspected small-volume peritoneal and/or liver metastases if resectional surgery is a possibility.

  See recommendation 1.2.1 on how care should be agreed and delivered.

1.4 Psychological support

1.4.1 Throughout the person's pancreatic cancer care pathway, specifically assess the psychological impact of:

- fatigue
- pain
- gastrointestinal symptoms (including changes to appetite)
- nutrition
- anxiety
- depression.

1.4.2 Provide people and their family members or carers (as appropriate) with information and support to help them manage the psychological impact of pancreatic cancer on their lives and daily activities. This should be:

- available on an ongoing basis
- relevant to the stage of the person's condition
- tailored to the person's needs.

1.4.3 For more guidance on providing information and support, see the NICE guideline on patient experience in adult NHS services.

1.5 Pain management

1.5.1 Consider EUS-guided or image-guided percutaneous neurolytic coeliac plexus block to manage pain for people with pancreatic cancer who:

- have uncontrolled pancreatic pain **or**
- are experiencing unacceptable opioid adverse effects **or**
- are receiving escalating doses of analgesics.

1.5.2 Do not offer thoracic splanchnicectomy to people with pancreatic cancer.

1.6 Nutritional management

1.6.1 Offer enteric-coated pancreatin for people with unresectable pancreatic cancer.

1.6.2 Consider enteric-coated pancreatin before and after pancreatic cancer resection.

1.6.3 Do not use fish oils as a nutritional intervention to manage weight loss in people with unresectable pancreatic cancer.

1.6.4 For people who have had pancreatoduodenectomy and who have a functioning gut, offer early enteral nutrition (including oral and tube feeding) rather than parenteral nutrition.

1.6.5 For more guidance on nutrition support, see the NICE guideline on nutrition support in adults.

1.7 Relieving biliary and duodenal obstruction

Biliary obstruction

1.7.1 Offer resectional surgery rather than preoperative biliary drainage to people who:

- have resectable pancreatic cancer and obstructive jaundice **and**
- are well enough for the procedure **and**
- are not enrolled in a clinical trial that requires preoperative biliary drainage.

1.7.2 During attempted resection for pancreatic cancer, consider surgical biliary bypass if the cancer is found to be unresectable.

1.7.3 If biliary drainage is needed in a person who has resectable pancreatic cancer and obstructive jaundice and is not yet fit enough for resectional surgery, offer endoscopically placed self-expanding metal stents.

1.7.4 For people with suspected pancreatic cancer who may need their stent removed later on, consider endoscopically placed self-expanding fully covered metal stents.

1.7.5 Offer endoscopically placed self-expanding metal stents rather than surgical biliary bypass to people with unresectable pancreatic cancer.

Duodenal obstruction

1.7.6 During attempted resection for head of pancreas cancer, consider prophylactic gastrojejunostomy if the cancer is found to be unresectable.

1.7.7 If possible, relieve symptomatic duodenal obstruction caused by unresectable pancreatic cancer.

1.7.8 When deciding between gastrojejunostomy and duodenal stent placement, consider gastrojejunostomy for people with a more favourable prognosis.

1.8 Managing resectable and borderline resectable pancreatic cancer

Neoadjuvant therapy

1.8.1 Only consider neoadjuvant therapy for people with borderline resectable pancreatic cancer as part of a clinical trial.

1.8.2 Only consider neoadjuvant therapy for people with resectable pancreatic cancer as part of a clinical trial.

Surgery

1.8.3 For people having surgery for head of pancreas cancer, consider pylorus-preserving resection if the tumour can be adequately resected.

1.8.4 Consider standard lymphadenectomy, rather than extended lymphadenectomy for people having head of pancreas resection.

Adjuvant treatment

1.8.5 Give people time to recover from surgery before starting adjuvant therapy. Start adjuvant therapy as soon as they are well enough to tolerate all 6 cycles.

1.8.6 Offer adjuvant gemcitabine plus capecitabine to people who have had sufficient time to recover after pancreatic cancer resection.

In February 2018, this was an off-label use. See NICE's information on prescribing medicines.

1.8.7 Consider adjuvant gemcitabine for people who are not well enough to tolerate combination chemotherapy.

In February 2018, this was an off-label use. See NICE's information on prescribing medicines.

Follow-up for resected pancreatic cancer

1.8.8 For people who have had resection, offer ongoing specialist assessment and care to identify and manage any problems resulting from surgery.

1.8.9 For people who have new, unexplained or unresolved symptoms after treatment, provide access to specialist investigation and support services.

1.9 Managing unresectable pancreatic cancer

Locally advanced pancreatic cancer

1.9.1 Offer systemic combination chemotherapy to people with locally advanced pancreatic cancer who are well enough to tolerate it.

1.9.2 Consider gemcitabine for people with locally advanced pancreatic cancer who are not well enough to tolerate combination chemotherapy.

1.9.3 When using chemoradiotherapy, consider capecitabine as the radiosensitiser.

Metastatic pancreatic cancer

First-line treatment

1.9.4 Offer FOLFIRINOX to people with metastatic pancreatic cancer and an Eastern Cooperative Oncology Group (ECOG) performance status of 0 to 1.

In February 2018, this was an off-label use. See NICE's information on prescribing medicines.

1.9.5 Consider gemcitabine combination therapy for people who are not well enough to tolerate FOLFIRINOX. See the section on nab-paclitaxel with gemcitabine (TA476).

In February 2018, this was an off-label use of many gemcitabine combination therapies. See NICE's information on prescribing medicines.

1.9.6 Offer gemcitabine to people who are not well enough to tolerate combination chemotherapy.

NICE guidance on a gemcitabine combination therapy

Find out why these recommendations look a little different from usual.

TA476: Nab-paclitaxel with gemcitabine

Paclitaxel as albumin-bound nanoparticles (nab-paclitaxel) with gemcitabine is recommended as an option for untreated metastatic adenocarcinoma of the pancreas in adults, only if:

- other combination chemotherapies are unsuitable and they would otherwise have gemcitabine monotherapy and
- the company provides nab-paclitaxel with the discount agreed in the patient access scheme.

This recommendation is not intended to affect treatment with nab-paclitaxel that was started in the NHS before this guidance was published. People having treatment outside this recommendation may continue without change to the funding arrangements in place for them before this guidance was published, until they and their NHS clinician consider it appropriate to stop.

To see why we made these recommendations, see the full technology appraisal guidance on paclitaxel as albumin-bound nanoparticles with gemcitabine for untreated metastatic pancreatic cancer.

Second-line treatment

1.9.7 Consider oxaliplatin-based chemotherapy as second-line treatment for people who have not had first-line oxaliplatin.

In February 2018, this was an off-label use. See NICE's information on prescribing medicines.

1.9.8 Consider gemcitabine-based chemotherapy as second-line treatment for people whose cancer has progressed after first-line FOLFIRINOX.

In February 2018, this was an off-label use. See NICE's information on prescribing medicines.

Venous thromboembolism prophylaxis

For recommendations on venous thromboembolism prophylaxis for people with pancreatic cancer, see the NICE guideline on reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism in over 16s.

Genomic biomarker-based treatment

The point at which to use genomic biomarker-based therapy in solid tumour treatment pathways is uncertain. See our topic page on genomic biomarker-based cancer treatments.

Terms used in this guideline

Standard lymphadenectomy

As defined by Tol et al. (2014) Definition of a standard lymphadenectomy in surgery for pancreatic ductal adenocarcinoma: a consensus statement by the International Study Group on Pancreatic Surgery (ISGPS)Tol et al. (2014) Definition of a standard lymphadenectomy in surgery for pancreatic ductal adenocarcinoma: a consensus statement by the International Study Group on Pancreatic Surgery (ISGPS). Surgery 156(3): 591–600

Context

Pancreatic cancer is the fifth most common cause of cancer death in the UK, with an annual incidence of nearly 9,600. On average, 23 people die each day from the disease. The UK has one of the worst survival rates in Europe, with average life expectancy on diagnosis just 4 to 6 months and a relative survival to 1 year of approximately 20%.

Only 3% of people survive for 5 years or longer. This figure has not improved much in over 40 years, and it is not yet clear how the more recent trend of increased surgery and adjuvant chemotherapy will affect survival.

Because of late diagnosis, only approximately 8% of people with pancreatic cancer are eligible for potentially curative surgery. However, people have up to a 30% chance of surviving 5 years if their tumour can be surgically removed and they have adjuvant chemotherapy.

The symptoms of pancreatic cancer are non-specific. One survey found that 40% of people diagnosed with pancreatic cancer in England had visited their GP 3 or more times before the diagnosis was made. Fifty per cent of people are diagnosed as an emergency in A&E. Even after diagnosis, there is evidence from the National Cancer Intelligence Network of wide variation in practice throughout England.

There are often delays in access to diagnosis and treatment (as highlighted in the NHS England Five Year Forward View), and this guideline will help to improve this.

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 Neoadjuvant therapy

Prospective randomised trials should be undertaken to compare preoperative (neoadjuvant) therapy with standard postoperative therapy in people with resectable pancreatic cancer.

Why this is important

The survival rate of pancreatic cancer after surgical resection is very low, which suggests that most patients have metastatic disease at the time of surgery. In addition, complications of surgery may stop people from having adjuvant therapy. This makes neoadjuvant therapy an attractive option. However, the evidence for neoadjuvant therapy is limited and low quality. Using neoadjuvant therapy means delaying surgery, and it is possible that during this delay pancreatic cancer will progress and become unresectable in some people, negating any benefit of neoadjuvant therapy.

Research is needed to compare neoadjuvant treatments (which might be chemotherapy, radiotherapy or both) with surgery followed by adjuvant chemotherapy. The outcomes of interest are:

- feasibility of delivering neoadjuvant treatment
- feasibility of randomising patients
- objective response rate of neoadjuvant therapy
- R0 resection rate
- surgical complications, length of hospital stay, mortality of surgery
- delivery of planned treatment
- disease-free survival and overall survival after surgery

- quality of life, patient experience and patient-reported outcome measures.

2 Cachexia interventions

A cohort study followed by phase 2 and 3 studies should be undertaken in people with pancreatic cancer and cachexia or pre-cachexia, to compare cachexia assessment methods and anti-cachexia interventions with standard care.

Why this is important

Most people with advanced and metastatic pancreatic cancer also have cachexia. This causes severe reductions in their quality of life and is associated with reduced overall survival. Cachexia has 3 phases: pre-cachexia, cachexia and refractory cachexia. The condition cannot be stopped by conventional nutritional support and leads to progressive functional impairment. Complete or partial reversal of cachexia would cause major improvements in quality of life, and potentially improve survival if people recover enough to have more effective cancer treatments. The outcomes of interest are:

- prevention or reversal of cachexia
- overall survival
- quality of life
- pain relief
- lean tissue mass
- tolerance to treatment.

3 Minimally invasive pancreatectomy

Prospective randomised trials should be undertaken to compare the effectiveness of minimally invasive pancreatectomy or pancreatoduodenectomy (laparoscopic or robotic) with open pancreatectomy or pancreatoduodenectomy in people with pancreatic cancer.

Why this is important

Minimally invasive surgery is generally considered to be more acceptable to patients than

open surgery. It has been introduced successfully for several other types of cancer and has been shown to improve quality of life. However, there is not enough evidence to determine whether minimally invasive surgery improves morbidity and mortality for people with pancreatic cancer, compared with open surgery. Prospective randomised trials are therefore needed in this area. The outcomes of interest are:

- conversion rate to open surgery
- R0 resection rate
- lymph node yield
- blood loss
- duration of surgery
- complications
- need for critical care
- length of hospital stay
- time to return to normal activity
- mortality of surgery
- long-term survival after surgery
- quality of life, patient experience and patient-reported outcome measures.

4 Pain management

A randomised trial should be undertaken comparing early endoscopic ultrasound-guided neurolytic coeliac plexus (EUS-guided NCP) interventions with on-demand EUS-guided NCP interventions in people with unresectable pancreatic cancer.

Why this is important

There is a limited number of randomised trials in this area, and the methods used to perform NCP intervention are heterogeneous. It is not clear if early NCP intervention is superior to on-demand NCP intervention in terms of the important outcomes for the

patient and duration of effect of the procedure. On-demand NCP intervention may benefit people with uncontrolled pain, people receiving escalating doses of analgesia, people experiencing unacceptable analgesic side effects, and others. However, people who receive early NCP intervention may not need on-demand NCP intervention later on. Further research should clarify if the timing of the intervention confers any advantage. The outcomes of interest are:

- reduction in pain
- patient experience (including nutritional status)
- health-related quality of life
- adverse events
- analgesic use
- survival.

5 Psychological support needs

A qualitative study should be undertaken to evaluate information and support interventions to address psychological needs at different points in the care pathway for people with pancreatic cancer.

Why this is important

People with pancreatic cancer often have unmet psychological support needs that impact on their quality of life. These can be related to anxiety and depression, and to the psychological impact of fatigue, pain, gastrointestinal symptoms (particularly changes to appetite) and nutritional status. There has been very little research into the information and support interventions that would meet these needs. Research would help identify effective information and support interventions that would improve quality of life for people with pancreatic cancer and their family members or carers. Outcomes of interest are:

- quality of life
- psychological wellbeing

- ability to carry out normal activities
- patient experience and patient-reported outcome measures.

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE webpage on pancreatic cancer.

For full details of the evidence and the guideline committee's discussions, see the full guideline. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting our guidelines into practice, see resources to help you put NICE guidance into practice.

Update information

Minor changes since publication

August 2023: As part of our work to make our guidance more useful and usable, we are testing out some changes to improve the way we present our guidance.

The recommendations from the technology appraisal guidance on nab-paclitaxel with gemcitabine (TA476) have been brought into this guideline.

This is so that healthcare professionals can see our recommendations for this medicine quickly, at the right point in this guideline and without having to click onto another page.

This is something we are testing with our users at the moment. It is not the final presentation. Tell us what you think using our survey, or if you have any questions, contact us at contenttransformation@nice.org.uk.

January 2022: Minor change to redirect NICE Pathway link.

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Accreditation