NICE National Institute for Health and Care Excellence

NICE Pathways

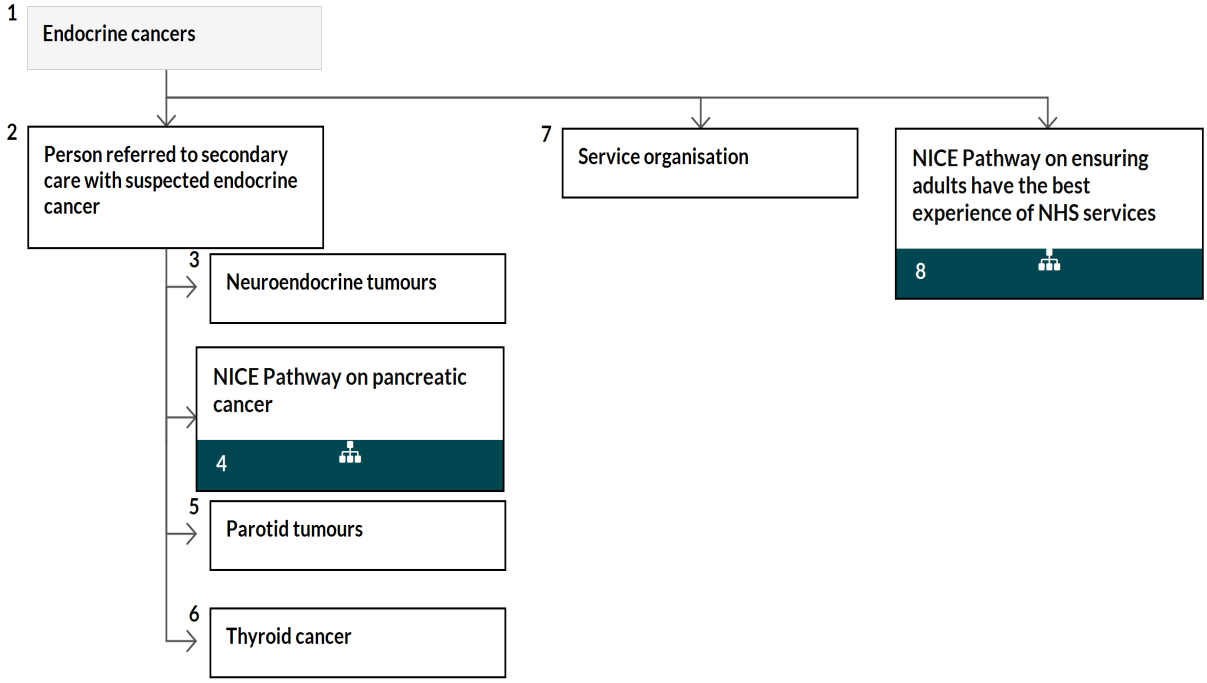
Endocrine cancers overview

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/endocrine-cancers
NICE Pathway last updated: 02 November 2020

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Endocrine cancers

No additional information

2 Person referred to secondary care with suspected endocrine cancer

See brain and central nervous system cancers and head and neck cancers in the NICE Pathway on suspected cancer recognition and referral.

3 Neuroendocrine tumours

Lutetium (177Lu) oxodotreotide

The following recommendation is from NICE technology appraisal guidance on lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours.

Lutetium (177Lu) oxodotreotide is recommended, within its marketing authorisation, as an option for treating unresectable or metastatic, progressive, well-differentiated (grade 1 or grade 2), somatostatin receptor-positive gastroenteropancreatic NETs in adults. It is recommended only if the company provides it according to the commercial arrangement.

See why we made the recommendation on lutetium (177Lu) oxodotreotide [See page 10].

NICE has written information for the public on lutetium (177Lu) oxodotreotide.

Everolimus and sunitinib

The following recommendations are from NICE technology appraisal guidance on everolimus and sunitinib for treating unresectable or metastatic neuroendocrine tumours in people with progressive disease.

Everolimus and sunitinib are recommended, within their marketing authorisations, as options for treating well- or moderately-differentiated unresectable or metastatic NETs of pancreatic origin in adults with progressive disease.

Everolimus is recommended, within its marketing authorisation, as an option for treating well-differentiated (grade 1 or grade 2) non-functional unresectable or metastatic NETs of

gastrointestinal or lung origin in adults with progressive disease.

Everolimus is recommended only when the company provides it with the discount agreed in the patient access scheme.

See why we made the recommendations on everolimus and sunitinib [See page 8].

NICE has written information for the public on everolimus and sunitinib.

Avelumab for metastatic Merkel cell carcinoma

See Merkel cell carcinoma in the NICE Pathway on skin cancer.

Genomic biomarker-based treatment for solid tumours

The point at which to use genomic biomarker-based therapy in solid tumour treatment pathways is uncertain. See the NICE Pathway on genomic biomarker-based treatment for solid tumours for guidance on specific treatments.

4 NICE Pathway on pancreatic cancer

See pancreatic cancer

5 Parotid tumours

Interventional procedures

NICE has published guidance on interstitial photodynamic therapy for malignant parotid tumours with **special arrangements** for clinical governance, consent and audit or research.

Genomic biomarker-based treatment for solid tumours

The point at which to use genomic biomarker-based therapy in solid tumour treatment pathways is uncertain. See the NICE Pathway on genomic biomarker-based treatment for solid tumours for guidance on specific treatments.

6 Thyroid cancer

A table of NHS England interim treatment regimens gives possible alternative treatment options for use during the COVID-19 pandemic to reduce infection risk. This may affect decisions for people with cancer. See the COVID-19 rapid guideline: delivery of systemic anticancer treatments for more details.

NICE is developing a guideline on thyroid cancer: assessment and management (publication expected April 2022).

Differentiated thyroid cancer after radioactive iodine

Lenvatinib and sorafenib for differentiated thyroid cancer after radioactive iodine

The following recommendations are from NICE technology appraisal guidance on lenvatinib and sorafenib for differentiated thyroid cancer after radioactive iodine.

Lenvatinib and sorafenib are recommended as options for treating progressive, locally advanced or metastatic differentiated thyroid cancer (papillary, follicular or Hürthle cell) in adults whose disease does not respond to radioactive iodine, only if:

- they have not had a tyrosine kinase inhibitor before or
- they have had to stop taking a tyrosine kinase inhibitor within 3 months of starting it because of toxicity (specifically, toxicity that cannot be managed by dose delay or dose modification).

Lenvatinib and sorafenib are recommended only if the companies provide them according to the commercial arrangements.

This recommendation is not intended to affect treatment with lenvatinib or sorafenib 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.

See why we made the recommendations on lenvatinib and sorafenib [See page 9].

NICE has written information for the public on lenvatinib and sorafenib.

Unresectable, locally advanced or metastatic medullary thyroid cancer

Cabozantinib for medullary thyroid cancer

The following recommendation is from NICE technology appraisal guidance on cabozantinib for treating medullary thyroid cancer.

Cabozantinib is recommended, within its marketing authorisation, as an option for treating progressive medullary thyroid cancer in adults with unresectable, locally advanced or metastatic disease, only if the company provides cabozantinib with the discount agreed in the patient access scheme.

See why we made the recommendation on cabozantinib [See page 8].

NICE has written information for the public on cabozantinib.

Vandetanib for treating medullary thyroid cancer

The following recommendations are from NICE technology appraisal guidance on vandetanib for treating medullary thyroid cancer.

Vandetanib is not recommended, within its marketing authorisation, for treating aggressive and symptomatic medullary thyroid cancer in adults with unresectable, locally advanced or metastatic disease.

This recommendation is not intended to affect treatment with vandetanib 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.

See why we made the recommendations on vandetanib [See page 10].

NICE has written information for the public on vandetanib.

Interventional procedures

NICE has published guidance on the following procedures with **standard or normal arrangements** for clinical governance, consent and audit:

- minimally invasive video-assisted thyroidectomy
- intraoperative nerve monitoring during thyroid surgery.

Genomic biomarker-based treatment for solid tumours

The point at which to use genomic biomarker-based therapy in solid tumour treatment pathways is uncertain. See the NICE Pathway on genomic biomarker-based treatment for solid tumours for guidance on specific treatments.

7 Service organisation

NICE has produced a cancer service guideline on improving supportive and palliative care for adults with cancer.

See NICE's recommendations on end of life care for people with life-limiting conditions and opioids for pain relief in palliative care.

8 NICE Pathway on ensuring adults have the best experience of NHS services

See Patient experience in adult NHS services

Cabozantinib

Cabozantinib and vandetanib are the only systemic treatment options for unresectable, locally advanced or metastatic medullary thyroid cancer. Both drugs are currently available through the Cancer Drugs Fund for progressive and symptomatic disease. Best supportive care is the only other available option for people who cannot have cabozantinib or vandetanib.

Clinical trial evidence suggests that cabozantinib is effective in delaying disease progression compared with best supportive care, but may not prolong survival. Without reliable comparative data, it was considered that cabozantinib and vandetanib are likely to be similarly effective.

The cost-effectiveness estimates for cabozantinib compared with best supportive care and vandetanib are less than £30,000 per quality-adjusted life year gained. Therefore, cabozantinib can be recommended as a cost-effective use of NHS resources.

For more information see the committee discussion in the NICE technology appraisal guidance on cabozantinib for treating medullary thyroid cancer.

Everolimus and sunitinib

NETs can affect the pancreas, gastrointestinal tissue and lungs and are difficult to diagnose and treat. They can significantly affect emotional health and often mean that people are unable to work. There is particularly high unmet need for people with NETs that affect the lungs.

Clinical trial evidence shows that everolimus and sunitinib are effective for treating pancreatic NETs compared with current treatment (best supportive care). Everolimus is effective for treating gastrointestinal and lung NETs compared with current treatment (best supportive care).

For treating pancreatic NETs, everolimus and sunitinib were recommended because they met NICE's end-of-life criteria. The cost effectiveness estimates varied, from below £20,000 up to £30,000 per quality-adjusted life year (QALY) gained.

For treating gastrointestinal NETs, everolimus did not meet the end-of-life criteria but was recommended because it is cost effective, at below £20,000 per QALY gained.

For treating lung NETs, everolimus did not meet the end-of-life criteria. The cost-effectiveness estimates for everolimus varied, from below £20,000 up to £30,000 per QALY gained. It was recommended because of the cost-effectiveness estimates and the limited treatment options

available for people with lung NETs.

NICE's end-of-life criteria are that life expectancy for people with the condition should be less than 24 months and that treatment should extend life by more than 3 months.

For more information see the committee discussion in the NICE technology appraisal guidance on everolimus and sunitinib for treating unresectable or metastatic neuroendocrine tumours in people with progressive disease.

Lenvatinib and sorafenib

Lenvatinib and sorafenib (tyrosine kinase inhibitors) are the only treatment options for progressive, locally advanced or metastatic differentiated thyroid cancer after surgery and radioactive iodine. For people who cannot have lenvatinib or sorafenib, best supportive care is the only option.

Clinical trial evidence shows that lenvatinib and sorafenib are both effective in delaying disease progression, but there is a higher response rate (that is, more tumours shrink) with lenvatinib and it may delay progression for longer. Clinical expert advice is that this response is associated with an improvement in symptoms, which is valued by patients. Lenvatinib and sorafenib also increase the length of time people live, but it is uncertain by how long.

The cost-effectiveness estimates are higher than what NICE normally considers acceptable, and lenvatinib and sorafenib do not meet NICE's end-of-life criteria. But the treatments do increase length of life and there are no other treatments available for the condition. Also, the cost-effectiveness estimates do not capture the benefits of people having a response to treatment, that is, an improvement in symptoms.

Taking all this into account, lenvatinib and sorafenib are recommended as treatment options for differentiated thyroid cancer after radioactive iodine. However, they are recommended only for people who have not had tyrosine kinase inhibitors before, or who have to stop them early because of tolerability (specifically, toxicity that cannot be managed by dose delay or dose modification). This is because there is not enough clinical evidence and no cost-effectiveness evidence to determine whether the treatments are effective when used sequentially.

For more information see the committee discussion in the NICE technology appraisal guidance on lenvatinib and sorafenib for treating differentiated thyroid cancer after radioactive iodine.

Rationale: Vandetanib

Vandetanib and cabozantinib are the only systemic treatment options for unresectable, locally advanced or metastatic medullary thyroid cancer. Best supportive care is the only other available option for people who cannot have vandetanib or cabozantinib.

Clinical trial evidence suggests that vandetanib may delay disease progression compared with best supportive care, but the benefit is uncertain. The evidence about whether vandetanib increases the overall length of time people live is unreliable. Clinical experts consider that vandetanib and cabozantinib are similarly effective, so more robust data from a cabozantinib trial are used because of the uncertainties in the evidence.

Cost-effectiveness estimates for vandetanib compared with either best supportive care or cabozantinib are much higher than what NICE normally considers an acceptable use of NHS resources. Vandetanib does not meet NICE's end-of-life or Cancer Drugs Fund criteria. Therefore, it cannot be recommended as a cost-effective use of NHS resources.

For more information see the committee discussion in the NICE technology appraisal guidance on vandetanib for treating medullary thyroid cancer.

Rationale: lutetium (177Lu) oxodotreotide

NETs can affect the pancreas and gastrointestinal tissue and are difficult to diagnose and treat. Current treatment options include everolimus, sunitinib and best supportive care.

Clinical trial evidence shows that lutetium (177Lu) oxodotreotide (referred to as lutetium) is effective for treating somatostatin receptor-positive gastrointestinal and pancreatic NETs. Indirect comparison with everolimus, sunitinib and best supportive care suggests lutetium is effective for treating gastrointestinal and pancreatic NETs in people with progressive disease.

For treating pancreatic NETs, lutetium meets NICE's end-of-life criteria. Compared with everolimus, sunitinib and best supportive care, the cost-effectiveness estimates are within the range NICE normally considers acceptable. So lutetium can be recommended for treating pancreatic NETs.

For treating gastrointestinal NETs, lutetium does not meet the end-of-life criteria because life expectancy for this form of the disease is between 5 and 6 years. But it can be recommended because the most plausible cost-effectiveness estimate is within what NICE normally considers

acceptable and treatment options for gastrointestinal NETs are limited.

For more information see the committee discussion in the NICE technology appraisal guidance on lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours.

Glossary

NETs

neuroendocrine tumours

Sources

Vandetanib for treating medullary thyroid cancer (2018) NICE technology appraisal guidance 550

Lutetium (177Lu) oxodotreotide for treating unresectable or metastatic neuroendocrine tumours (2018) NICE technology appraisal guidance 539

Lenvatinib and sorafenib for treating differentiated thyroid cancer after radioactive iodine (2018) NICE technology appraisal guidance 535

Cabozantinib for treating medullary thyroid cancer (2018) NICE technology appraisal guidance 516

Everolimus and sunitinib for treating unresectable or metastatic neuroendocrine tumours in people with progressive disease (2017) NICE technology appraisal guidance 449

Your responsibility

Guidelines

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.

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.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so 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.

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.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance 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.