NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Cabozantinib for previously treated differentiated thyroid cancer after radioactive iodine

Draft scope

Draft remit/evaluation objective

To appraise the clinical and cost effectiveness of cabozantinib within its marketing authorisation for previously treated radioiodine-refractory differentiated thyroid cancer.

Background

Thyroid cancer is a rare type of cancer that affects the thyroid gland, a gland at the base of the neck that produces hormones. Thyroid cancers can be differentiated or undifferentiated. Differentiated thyroid cancer cells retain the appearance of normal thyroid cells and do not spread as quickly as undifferentiated cancer cells. There are 4 main types of thyroid cancer: papillary, follicular, medullary and anaplastic. Papillary and follicular carcinomas are differentiated thyroid cancers and the most common types of thyroid cancer, with similar management and prognosis. There are also several less common variants of differentiated thyroid cancer, including but not limited to Hürthle cell, tall cell, insular, and columnar.

Thyroid cancer is uncommon and accounted for 1.2% of all new cases of cancer in the UK in 2020.[1] There was a 5-year prevalence of 21,306 people with thyroid cancer in the UK in 2020.[1] Differentiated thyroid cancers are the most common types of thyroid cancers, with papillary carcinomas responsible for 80% of cases.[2] Follicular carcinomas account for approximately 1% of cases.[2] Differentiated thyroid cancers are typically curable, 10-year survival is typically around 85%.[3] Survival for thyroid cancer is strongly related to stage of disease. Survival is highest for adults diagnosed when the cancer is localised to the thyroid (Stage 1 to Stage 3), with 1-year age-standardised survival of around 99%. Once the cancer has spread beyond the thyroid (Stage 4) 1-year age-standardised survival for adults diagnosed is 77%.[4]

Thyroid cancer is usually treated by partial or total thyroidectomy. The choice of surgery depends on the type and size of cancer amongst other factors. Surgery may be followed by adjuvant treatments. Primarily, this is radioactive iodine which is used to destroy any remaining cancer cells. External beam radiotherapy or palliative chemotherapy can also be used. The British Thyroid Association's 'Guidelines for the management of thyroid cancer' notes that the use of external beam radiotherapy and chemotherapy in palliative care has begun to be superseded by targeted therapy.[5] In clinical practice, best supportive care is offered until the disease starts to progress and symptoms occur, or there is rapid progression that is likely to become symptomatic. For residual or recurrent disease targeted therapy (tyrosine kinase inhibitors) may be used. NICE technology appraisal 535 recommends lenvatinib and sorafenib, which inhibit multiple receptor tyrosine kinases including vascular endothelial growth factor (VEGF) receptors, as options for treating differentiated thyroid cancer after radioactive iodine.

The technology

Cabozantinib (Cabometyx, Ipsen) does not currently have a marketing authorisation in the UK for previously treated radioiodine-refractory differentiated thyroid cancer. It has been studied in clinical trials alone in people with radioiodine-refractory differentiated thyroid cancer who have progressed after VEGF receptor targeted therapy.

Intervention	Cabozantinib
Population	People with previously treated radioiodine-refractory differentiated thyroid cancer.
Comparator	Best supportive care
Outcomes	The outcome measures to be considered include: • overall survival • progression-free survival • response rate • adverse effects of treatment • health-related quality of life.
Economic analysis	The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year. 'If the technology is likely to provide similar or greater health benefits at similar or lower cost than technologies recommended in published NICE technology appraisal guidance for the same indication, a cost comparison may be carried out.' The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared. Costs will be considered from an NHS and Personal Social Services perspective. The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account.
Other considerations	Guidance will only be issued in accordance with the marketing authorisation. Where the wording of the therapeutic indication does not include specific treatment combinations, guidance will be issued only in the context of the evidence that has underpinned the marketing authorisation granted by the regulator.
Related NICE recommendations	**Related Technology Appraisals:**

	'Lenvatinib and sorafenib for treating differentiated thyroid cancer after radioactive iodine' (2018). NICE Technology appraisal guidance 535. Review date to be confirmed. **Related appraisals in development:** 'Selumetinib for treating differentiated thyroid cancer' NICE technology appraisal guidance [ID1079]. Publication date to be confirmed. 'Pralsetinib for thyroid cancer' NICE technology appraisal guidance [ID4018]. Publication date to be confirmed. **Related Guidelines:** 'Thyroid disease: assessment and management' (2019). NICE guideline 145. No current plans to review this guideline. **Guidelines in development:** 'Thyroid cancer: assessment and management' Publication expected November 2022. **Related interventional Procedures:** 'Minimally invasive video-assisted thyroidectomy' (2014). NICE interventional procedures guidance 499. 'Intraoperative nerve monitoring during thyroid surgery' (2008) NICE interventional procedures guidance 255.
Related National Policy	The NHS Long Term Plan, 2019. NHS Long Term Plan NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019), chapters 9, 12, 105, 106

Questions for consultation

Are external beam radiotherapy and chemotherapy treatments considered to be established clinical practice in the NHS for previously treated radioiodine-refractory differentiated thyroid cancer?

- If chemotherapy is used in clinical practice, how is chemotherapy defined?

How should best supportive care be defined?

Where do you consider cabozantinib will fit into the existing care pathway for previously treated radioiodine-refractory differentiated thyroid cancer?

- Would lenvatinib and sorafenib be considered comparators in clinical practice in the NHS?

Would cabozantinib be a candidate for managed access?

Do you consider cabozantinib to be innovative in its potential to make a significant and substantial impact on health-related benefits and how it might improve the way that current need is met (is this a 'step-change' in the management of the condition)?

Do you consider that the use of cabozantinib can result in any potential substantial health-related benefits that are unlikely to be included in the QALY calculation?

Please identify the nature of the data which you understand to be available to enable the committee to take account of these benefits.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims. In particular, please tell us if the proposed remit and scope:

- could exclude from full consideration any people protected by the equality legislation who fall within the patient population for which cabozantinib will be licensed;

- could lead to recommendations that have a different impact on people protected by the equality legislation than on the wider population, e.g. by making it more difficult in practice for a specific group to access the technology;

- could have any adverse impact on people with a particular disability or disabilities.

Please tell us what evidence should be obtained to enable the committee to identify and consider such impacts.

NICE intends to evaluate this technology through its Single Technology Appraisal process. We welcome comments on the appropriateness of appraising this topic through this process. (Information on NICE's health technology evaluation processes is available at https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-technology-appraisal-guidance/changes-to-health-technology-evaluation).

NICE's health technology evaluations: the manual states the methods to be used where a cost comparison case is made.

- Would it be appropriate to use the cost-comparison methodology for this topic?

- Is the new technology likely to be similar in its clinical efficacy and resource use to any of the comparators?

- Is the primary outcome that was measured in the trial or used to drive the model for the comparator(s) still clinically relevant?

- Is there any substantial new evidence for the comparator technology/ies that has not been considered? Are there any important ongoing trials reporting in the next year?

References

1. International Agency for Research on Cancer (2021) United Kingdom. Accessed March 2022.

2. NHS conditions (2019) Thyroid cancer. Accessed March 2022.

3. Dal Maso L, Tavilla A, Pacini F et al. (2017) Survival of 86,690 patients with thyroid cancer: A population-based study in 29 European countries from EUROCARE-5. European Journal of Cancer 1;77:140-152.

4. Office for National Statistics (2019) Cancer survival in England - adults diagnosed. Accessed March 2022.

5. Perros P, Colley S, Boelaert K et al. (2014) Guidelines for the management of thyroid cancer. Clinical Endocrinology: 81;s1.