NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Nivolumab for treating small-cell lung cancer after platinum-based chemotherapy

Draft scope

Draft remit/appraisal objective

To appraise the clinical and cost effectiveness of nivolumab within its marketing authorisation for treating small-cell lung cancer after platinum-based chemotherapy

Background

Lung cancer falls into two main histological categories: non-small-cell lung cancers and small-cell lung cancers. Small-cell lung cancer (SCLC) is a type of lung cancer that grows rapidly and spreads quickly to other parts of the body. SCLC can be classified as limited disease (cancer has not spread beyond one lung or nearby lymph nodes) or extensive disease (the cancer has spread beyond one lung)[1]. Common symptoms of SCLC include weight loss, malaise, bone pain, breathlessness and haemoptysis.

In 2016 there were 38,381 cases of lung cancer registered in England[2]. Around 12% of lung cancer cases are SCLC[1]. An estimated 58% of those with SCLC will receive first-line chemotherapy; of this group 95% to 100% will not respond or will ultimately relapse. Of the patients who relapse or do not respond, 40% will receive second line chemotherapy[3].

Following relapse after first treatment, if chemotherapy is suitable, NICE guideline CG121 recommends that SCLC is treated with an anthracycline-containing regimen or retreated with a platinum-based regimen to a maximum of six cycles. Radiotherapy can be offered for the palliation of local symptoms. In addition, NICE guidance TA184 recommends oral topotecan as an option only for people with relapsed small-cell lung cancer when re-treatment with the first-line regimen is not considered appropriate and the combination of cyclophosphamide, doxorubicin and vincristine (CAV) is contraindicated.

The technology

Nivolumab (Opdivo, Bristol-Myers Squibb) is a fully humanised monoclonal antibody that specifically binds to anti-programmed cell death-1 (PD-1) receptor on the surface of immune cells and restores T-cell activity by blocking the inhibitory pathway with PD-L1. It is administered intravenously.

Nivolumab does not currently have a marketing authorisation in UK for treating small-cell lung cancer after platinum-based chemotherapy. It is being

studied in a clinical trial compared with topotecan or amrubicin in people with relapsed SCLC after platinum-based chemotherapy.

Intervention(s)	Nivolumab
Population(s)	Adults with small-cell lung cancer who have had platinum-based chemotherapy
Comparators	• Chemotherapy (anthracycline-containing or platinum-based regimen) • Oral topotecan (when re-treatment with the first-line regimen is not considered appropriate and the combination of cyclophosphamide, doxorubicin and vincristine is contraindicated)
Outcomes	The outcome measures to be considered include: • overall survival • progression-free survival • response rates • 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 or comparator 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 and NICE Pathways	**Related Technology Appraisals:** Topotecan for the treatment of relapsed small-cell lung cancer (2009). NICE technology appraisal 184. On static list. **Appraisals in development (including suspended appraisals)** Nivolumab with ipilimumab for previously treated extensive stage small-cell lung cancer [ID1228]. Suspended. Nivolumab with ipilimumab for maintenance treatment of extensive stage small-cell lung cancer after chemotherapy [ID1264]. Publication date to be confirmed. Rovalpituzumab tesirine for treating small-cell lung cancer after 2 therapies [ID1288]. Suspended. **Related Guidelines:** Lung cancer: diagnosis and management (2011) NICE guideline CG121. Update in development. **Guidelines in development** Lung cancer: diagnosis and management (update). Publication expected February 2019. **Related Quality Standards:** Lung cancer in adults (2012). NICE quality standard 17. **Related NICE Pathways:** Lung cancer (2018) NICE Pathway
Related National Policy	NHS England (2017) Manual for Prescribed Specialised Services 2017/18. Chapter 105 – Specialist cancer

	services and Chapter 18 – Adult thoracic surgery services Department of Health NHS Outcomes Framework 2016-2017 (published 2016): Domain 1.

Questions for consultation

Have all relevant comparators for nivolumab been included in the scope? Which treatments are considered to be established clinical practice in the NHS for small-cell lung cancer after platinum-based chemotherapy?

Are the outcomes listed appropriate?

Are there any subgroups of people in whom nivolumab is expected to be more clinically effective and cost effective or other groups that should be examined separately?

Where do you consider nivolumab will fit into the existing NICE pathway, Lung cancer?

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 nivolumab 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.

Do you consider nivolumab 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 nivolumab can result in any potential significant and 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 appraisal committee to take account of these benefits.

To help NICE prioritise topics for additional adoption support, do you consider that there will be any barriers to adoption of this technology into practice? If yes, please describe briefly.

NICE intends to appraise this technology through its Single Technology Appraisal (STA) Process. We welcome comments on the appropriateness of appraising this topic through this process. (Information on the Institute's Technology Appraisal processes is available at http://www.nice.org.uk/article/pmg19/chapter/1-Introduction).

NICE has published an addendum to its guide to the methods of technology appraisal (available at https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/NICE-technology-appraisals/methods-guide-addendum-cost-comparison.pdf), which 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. Cancer Research UK, Lung cancer: Stages, types and grades (Accessed August 2018)
2. Office for National Statistics (2018) Cancer Registration Statistics, England 2016 (Accessed August 2018)
3. National Institute for Health and Clinical Excellence (2009) Costing statement: topotecan for the treatment of small-cell lung cancer. Technology appraisal 184.