

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Atezolizumab with carboplatin and etoposide for untreated extensive-stage small-cell lung cancer

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of atezolizumab with carboplatin and etoposide within its marketing authorisation for untreated extensive-stage small-cell lung cancer

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 that is contained in a single area that can be treated with radiotherapy for example, one lung or nearby lymph nodes) or extensive-stage disease (cancer that has spread beyond a single area that can be treated with radiotherapy for example, to the other lung or to other parts of the body)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 England². Around 12% of lung cancer cases are SCLC³. The prognosis for patients with extensive-stage SCLC is poor, with a 5-year survival rate of 10%⁴. An estimated 66% of those with extensive-stage SCLC will receive platinum-based combination chemotherapy as a first therapy⁵.

The aims of therapy for people with extensive-stage disease are to prolong survival and improve quality of life³. The NICE lung cancer clinical guideline 121 recommends that all patients with untreated extensive stage SCLC should be offered platinum-based combination chemotherapy, for a maximum of six cycles. The disease response and drug toxicity should be assessed before each cycle. In clinical practice, patients may receive etoposide in combination with a platinum therapy, or where etoposide is contraindicated, patients may receive irinotecan in combination with cisplatin or gemcitabine in combination with carboplatin (in patients with poor prognosis)⁶. Thoracic radiotherapy can be offered after chemotherapy if there has been a complete response at distant sites and at least a good partial response within the thorax.

However, for 95 to 100% of people with extensive-stage SCLC treated with first line platinum-based combination chemotherapy, the disease will not respond to treatment or will eventually relapse. 40% of people whose disease

relapses or does not respond will have second line chemotherapy. Radiotherapy can be offered for the palliation of local symptoms.

The technology

Atezolizumab (Tecentriq, Roche) is a humanised, anti-programmed cell death ligand-1 (PD-L1) monoclonal antibody involved in the blockade of immune suppression and the subsequent reactivation of anergic T-cells. It is administered intravenously.

Atezolizumab does not currently have a marketing authorisation in the UK for treating small-cell lung cancer. It has been studied in a randomised controlled trial with carboplatin and etoposide compared to placebo with carboplatin and etoposide in people with untreated extensive-stage SCLC.

Intervention(s)	Atezolizumab with carboplatin and etoposide
Population(s)	Adults with untreated extensive-stage small-cell lung cancer
Comparators	Platinum-based combination chemotherapy regimens
Outcomes	The outcome measures to be considered include: <ul style="list-style-type: none">• overall survival• progression-free survival• response rates• adverse effects of treatment• health-related quality of life

<p>Economic analysis</p>	<p>The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.</p> <p>If appropriate, the appraisal should include consideration of the costs and implications of additional testing for biological markers, but will not make recommendations on specific diagnostic tests or devices.</p> <p>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.</p> <p>The availability of any patient access schemes for the intervention or comparator technologies will be taken into account.</p>
<p>Other considerations</p>	<p>If the evidence allows, consideration will be given to subgroups based on biological markers.</p> <p>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.</p>
<p>Related NICE recommendations and NICE Pathways</p>	<p>Related Technology Appraisals:</p> <p>Topotecan for the treatment of relapsed small-cell lung cancer (2009). NICE Technology Appraisal 184. Placed on the static list in 2013.</p> <p>Related Guidelines:</p> <p>Lung cancer: diagnosis and treatment (2011). NICE guideline 121. Reviewed March 2016. Review decision: guideline to be updated.</p> <p>Related Interventional Procedures:</p> <p>Microwave ablation for treating primary lung cancer and metastases in the lung (2013). NICE interventional procedures guidance 469.</p> <p>Related Quality Standards:</p> <p>Lung cancer in adults (2012). NICE quality standard 17.</p> <p>Related NICE Pathways:</p> <p>Lung cancer (2016) NICE pathway</p>

	http://pathways.nice.org.uk/
Related National Policy	<p>NHS England:</p> <p>NHS England (May 2017) Manual for prescribed specialised services 2017/18, Chapter 105: Specialist cancer services (adults) and Chapter 18: Adult thoracic surgery services.</p> <p>NHS England (2017/19) Standard contract for cancer: chemotherapy (adult)</p> <p>Department of Health:</p> <p>Department of Health (2011) Improving Outcomes: A Strategy for Cancer</p> <p>Department of Health (2016) NHS Outcomes Framework 2016-2017. Domains 1 and 2.</p>

References

1. Kalemkerian GP, Schneider BJ. Advances in Small Cell Lung Cancer. [Hematol Oncol Clin North Am. 2017; 31\(1\):143-156](#) (Accessed September 2018)
2. Office for National Statistics (2016) [Cancer registration statistics](#). (Accessed September 2018)
3. Cancer Research UK, [Lung cancer](#) (Accessed September 2018)
4. Alvarado-Luna G, Morales-Espinosa D. Treatment for small cell lung cancer, where are we now?—a review. [Transl Lung Cancer Res 2016;5\(1\):26-38](#) (Accessed September 2018)
5. Khakwani A, Rich AL, Tata LJ et al. Small-Cell Lung Cancer in England: Trends in Survival and Chemotherapy Using the National Lung Cancer Audit. [PLOS ONE. 2014. 9 \(2\) e89426](#) (Accessed September 2018)
6. European Society for Medical Oncology. (2013). Small-cell lung cancer: ESMO Clinical Practice Guidelines. (Accessed September 2018)