NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Ceritinib for previously treated anaplastic lymphoma kinase-positive non-small-cell lung cancer

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of ceritinib within its marketing authorisation for previously treated anaplastic lymphoma kinase-positive non-small-cell lung cancer.

Background

Lung cancer falls into 2 histological categories: non-small-cell lung cancers, which account for 85–90% of all lung cancers, and small-cell lung cancers. Approximately 30% of people present with locally advanced disease (stage III; the cancer may have grown into the surrounding tissues and there may be cancer cells in the lymph nodes) and 40% with metastatic disease (stage IV; the cancer has spread to another part of the body). The prognosis for people with non-small-cell lung cancer is generally poor, with a 5-year survival rate of 9%.

Approximately 5% of people with stage III or IV non-small-cell lung cancer have chromosomal alterations described as anaplastic lymphoma kinase (ALK) fusion genes, which amounts to a total of 925 patients in England. ALK fusion genes occur between the tyrosine kinase portion of the ALK gene and other genes and are believed to be involved in the growth of tumours. People with non-small-cell lung cancer who have an ALK fusion gene mutation are unlikely to have epidermal growth factor receptor (EGFR) mutations. ALK fusion genes are strongly associated with resistance to EGFR tyrosine kinase inhibitors such as erlotinib and gefitinib.

For most people with non-small-cell lung cancer, the aim of treatment is to improve survival, disease control and quality of life. NICE clinical guideline 121 recommends platinum-based chemotherapy as a first-line treatment for people with stage III or IV non-small-cell lung cancer and good performance status. In addition, NICE technology appraisal guidance 181 and 190 recommend pemetrexed as an option for the first-line treatment and maintenance treatment of locally advanced or metastatic non-squamous non-small-cell lung cancer. If second-line treatment is appropriate for people with locally advanced or metastatic non-small-cell lung cancer in whom relapse has occurred after previous chemotherapy, docetaxel monotherapy should be considered (NICE clinical guideline 121). Crizotinib is not recommended in NICE technology appraisal guidance 296 for adults with previously treated AKL-positive advanced non-small-cell lung cancer but is available through the Cancer Drugs Fund for the second- or subsequent-line treatment of ALK-

positive advanced or metastatic non-small-cell lung cancer after first-line treatment with combination chemotherapy. No treatment options are currently recommended by NICE after disease progression on second-line treatment.

The technology

Ceritinib (Zykadia, Novartis) selectively inhibits the ALK receptor tyrosine kinase. This has been found to induce the death of cancer cells harbouring ALK fusion genes. Ceritinib is administered orally.

Ceritinib has received a positive opinion from the Committee of Medicinal Products for Human Use for adult patients with ALK-positive advanced non-small cell lung cancer (NSCLC) previously treated with crizotinib.

Intervention(s)	Ceritinib
Population(s)	People with anaplastic lymphoma kinase-positive (ALK-positive) advanced non-small-cell lung cancer previously treated with crizotinib.
Comparators	• Best supportive care
Outcomes	The outcome measures to be considered include: • overall survival • progression-free survival • overall 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. 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.

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 in the context of the evidence that has underpinned the marketing authorisation granted by the regulator. The implications of additional testing requirements should be considered.
Related NICE recommendations and NICE Pathways	Related Technology Appraisals: Technology Appraisal No. 296, September 2013, 'Crizotinib for previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene' Review Proposal Date May 2016. Technology Appraisal No. 124, August 2007, 'Pemetrexed for the treatment of non-small-cell lung' Guidance on static list. Technology Appraisal in Preparation, 'Nintedanib for previously treated locally advanced or metastatic non-small cell lung cancer' Earliest Anticipated Date of Publication May 2015. Related Guidelines: Clinical Guideline No. 121, April 2011, 'Lung cancer: The diagnosis and treatment of lung cancer' Review Proposal Date TBC. Related Quality Standards Quality Standard No. 17, March 2012, 'Lung cancer for adults' Review Proposal Date March 2017. Related NICE Pathways NICE Pathway: Lung Cancer, Pathway created: March 2012.
Related National Policy	**Manual for Prescribed Specialised Services** **National Service Frameworks**: Cancer **Department of Health documents**: Department of Health (2012) NHS Outcomes Framework 2013-2014 Department of Health (2011) Improving outcomes: a strategy for cancer Department of Health (2009) Cancer commissioning guidance

	Department of Health (2007) Cancer reform strategy