NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

Multiple Technology Appraisal

Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed following prior chemotherapy (review of NICE technology appraisals 162 and 175)

Final scope

Appraisal objective

To appraise the clinical and cost effectiveness of erlotinib and gefitinib within their licensed indications for the treatment of non-small-cell lung cancer following prior chemotherapy (review of NICE technology appraisals 162 and 175).[1]

Background

In England and Wales approximately 33,000 people are diagnosed with lung cancer each year. Around 72% (approximately 20,000) of lung cancers are non-small cell lung cancers (NSCLC), which can be further classified into three histological sub-types of large-cell undifferentiated carcinoma, squamous cell carcinoma and adenocarcinoma. The majority of lung cancers are diagnosed in the later stages, with 21% presenting with locally and regionally advanced disease (stage IIIB) and 48% presenting with advanced disease (stage IV) in which the cancer has spread to other parts of the body. For people presenting with NSCLC stage IIIB the 5-year survival rate is around 7 to 9%, for people presenting with NSCLC stage IV the 5-year survival rate varies from 2 to 13%.

People with NSCLC can be either epidermal growth factor receptor (EGFR)-positive or EGFR-negative. The EGFR-tyrosine kinase (EGFR-TK) is a selective target for inhibiting cancer. In normal cells, EGFR-TK is controlled and therefore the overexpression of EGFR-TK is considered a critical factor in the development and malignancy of NSCLC tumours.

For the majority of people with NSCLC, the aims of therapy are to prolong survival and improve quality of life. For patients with locally advanced or metastatic NSCLC who have progressed following prior chemotherapy, NICE recommends that docetaxel monotherapy should be considered if second-line therapy is appropriate (NICE clinical guideline 121). NICE also recommends erlotinib as a second line treatment option for NSCLC (NICE technology

[1] This appraisal includes a review of: Technology Appraisal No. 162,published November 2008, 'Erlotinib for the treatment of non-small-cell lung cancer'; Terminated Technology Appraisal No. 175, May 2009. 'Gefitinib for the second-line treatment of locally advanced or metastatic non-small-cell lung cancer'.

appraisal guidance 162). Pemetrexed is not recommended for treatment of locally advanced or metastatic NSCLC after prior chemotherapy (NICE technology appraisal guidance 124). NICE was unable to appraise gefitinib as a second-line treatment option for people with NSCLC because the manufacturer did not provide an evidence submission (NICE technology appraisal guidance 175).

The technology

Erlotinib (Tarceva, Roche Products) is an orally administered inhibitor of the epidermal growth factor receptor tyrosine kinase (EGFR-TK). It blocks the signal pathways involved in cell proliferation and slows the growth and spread of the tumour. Erlotinib has a UK marketing authorisation for the treatment of patients with locally advanced or metastatic NSCLC after failure of at least one prior chemotherapy regimen.

Gefitinib (Iressa, AstraZeneca) is an orally active EGFR-TK inhibitor which blocks the signal pathways involved in cell proliferation. Gefitinib has a UK marketing authorisation for the treatment of adult patients with locally advanced or metastatic NSCLC with activating mutations of EGFR-TK.

Intervention(s)	• Erlotinib • Gefitinib
Population(s)	Adults with locally advanced or metastatic non-small-cell lung cancer that has progressed following prior chemotherapy
Comparators	Erlotinib and gefitinib should be compared with each other and with: • Docetaxel • Best supportive care
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. 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 authorisations. If the evidence allows, subgroups such as those defined by histology (squamous/ non squamous) and EGFR mutation status. The appraisal should consider the implications of mutational testing. The availability of any patient access schemes for the interventions and comparators should be taken into account in the analysis.
Related NICE recommendations	Related Technology Appraisals: Technology Appraisal No. 162, November 2008, 'Erlotinib for the treatment of non-small-cell lung cancer'. Terminated Technology Appraisal No. 175, May 2009. 'Gefitinib for the second-line treatment of locally advanced or metastatic non-small-cell lung cancer'. Technology Appraisal No. 124, August 2007, 'Pemetrexed for the treatment of non-small-cell lung cancer'. Guidance on static list. Suspended Technology Appraisal, September 2012. 'Cetuximab for the treatment of advanced non-small cell lung cancer'. Suspended Technology Appraisal, November 2009. 'Vandetanib for the second and subsequent line treatment of non-small cell lung cancer after previous platinum containing chemotherapy'. Technology Appraisal in development, 'Crizotinib for the treatment of previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene'. Earliest anticipated date of publication, July 2013. Related Guidelines: Clinical Guideline No. 121, April 2011, 'The diagnosis and treatment of lung cancer (update of clinical

	guideline 24)'. Related Quality Standards: Quality Standard No. 17, March 2012, 'Quality standard for lung cancer'. Related NICE Pathways: NICE Pathway: Non-small cell lung cancer, Pathway created March 2012. http://pathways.nice.org.uk/pathways/lung-cancer/treatment-for-non-small-cell-lung-cancer