

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Paclitaxel as albumin-bound nanoparticles in combination with carboplatin for untreated non-small-cell lung cancer

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of paclitaxel formulated as albumin-bound nanoparticles in combination with carboplatin within its marketing authorisation for untreated non-small-cell lung cancer.

Background

Lung cancer falls into 2 main histological categories: around 85-90% are non-small-cell lung cancers (NSCLC) and the remainder are small-cell lung cancers. NSCLC can be further classified into 3 histological sub-types of large-cell undifferentiated carcinoma, squamous-cell carcinoma and adenocarcinoma. Most lung cancers are diagnosed at an advanced stage, when the cancer has spread to lymph nodes and other organs in the chest (locally advanced disease; stage III) or to other parts of the body (metastatic disease; stage IV). In 2013, approximately 28,500 people were diagnosed with NSCLC in England and Wales, of whom 13% had stage IIIA, 10% had stage IIIB and 46% had stage IV disease.¹

Lung cancer caused approximately 28,300 deaths in England in 2012². The median survival of people with lung cancer (all stages) is approximately 6 months; 35% of people with lung cancer survive for more than 1 year after diagnosis¹.

For the majority of people with NSCLC, the aims of treatment are to prolong survival and improve quality of life. For many people with stage IIIB or IV disease, the cancer has spread too far for surgery or radiotherapy to be effective so chemotherapy is recommended. For people with untreated stage III or IV NSCLC and good performance status, NICE clinical guideline 121 recommends chemotherapy with a platinum drug (carboplatin or cisplatin) in combination with a third-generation drug (docetaxel, gemcitabine, paclitaxel or vinorelbine). People who are unable to tolerate a platinum combination may be offered single-agent chemotherapy with a third-generation drug. Pemetrexed in combination with cisplatin is recommended as an option if the tumour is an adenocarcinoma or large-cell carcinoma (NICE technology appraisal guidance 181).

The technology

Paclitaxel as albumin-bound nanoparticles (Abraxane, Celgene) is a form of paclitaxel that inhibits cancer growth by blocking cell division and promoting cell death. This formulation (which is also known as nab-paclitaxel) contains

albumin to help transport paclitaxel through the walls of the blood vessels and increase the amount of paclitaxel in the area of the tumour. It is administered as an intravenous infusion.

Paclitaxel as albumin-bound nanoparticles, in combination with carboplatin, has a marketing authorisation in the UK for the first-line treatment of non-small-cell lung cancer in adult patients who are not candidates for potentially curative surgery and/or radiation therapy.

Intervention(s)	Paclitaxel as albumin-bound nanoparticles in combination with carboplatin
Population(s)	Adults with untreated non-small-cell lung cancer for whom potentially curative surgery and/or radiation therapy is unsuitable
Comparators	<p>Paclitaxel (standard formulation), docetaxel, gemcitabine or vinorelbine in combination with platinum-based chemotherapy (carboplatin or cisplatin)</p> <p>For people for whom the histology of the tumour has been confirmed as adenocarcinoma or large-cell carcinoma:</p> <ul style="list-style-type: none"> • pemetrexed in combination with cisplatin
Outcomes	<p>The outcome measures to be considered include:</p> <ul style="list-style-type: none"> • overall survival • progression-free survival • response rates • adverse effects of treatment • health-related quality of life.
Economic analysis	<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>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.</p> <p>Costs will be considered from an NHS and Personal Social Services perspective.</p>

Other considerations	<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>
Related NICE recommendations and NICE Pathways	<p>Related Technology Appraisals:</p> <p>Liposomal cisplatin in combination with chemotherapy for treating inoperable advanced non-small-cell lung cancer. ID 657. Publication date to be confirmed.</p> <p>Pemetrexed for the first-line treatment of non-small-cell lung cancer (2009). NICE technology appraisal guidance 181. Moved to static list in December 2014.</p> <p>Terminated appraisal:</p> <p>Bevacizumab for the treatment of non-small-cell lung cancer (2008). NICE technology appraisal 148.</p> <p>Related Guideline:</p> <p>Lung cancer: The diagnosis and treatment of lung cancer (2011). NICE clinical guideline 121. Review date December 2015.</p> <p>Related Quality Standard:</p> <p>Lung cancer (2012). NICE quality standard 17.</p> <p>Related NICE Pathway:</p> <p>Lung cancer. Pathway created Mar 2012: http://pathways.nice.org.uk/pathways/lung-cancer</p>
Related National Policy	<p>NHS England, Manual for prescribed specialised services (Chapter 105): specialist cancer services (adults), Jan 2014. http://www.england.nhs.uk/wp-content/uploads/2014/01/pss-manual.pdf</p> <p>Department of Health, NHS Outcomes Framework 2014-2015, Nov 2013. Domains 1,2,4 and 5. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/256456/NHS_outcomes.pdf</p> <p>Department of Health, Improving Outcomes: A strategy for cancer, third annual report, Dec 2013. https://www.gov.uk/government/publications/the-national-cancer-strategy-3rd-annual-report--2</p> <p>Department of Health, Cancer commissioning guidance, Dec 2009. http://webarchive.nationalarchives.gov.uk/20130107105</p>

	354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_110115
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References

1. [National Lung Cancer Audit: 2013 Patient Cohort](#). Published 2014.
2. [Cancer Research UK](#) (2013) Lung cancer survival and mortality statistics. Accessed March 2015.