NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Palbociclib in combination with an aromatase inhibitor for previously untreated metastatic, hormone receptor-positive, HER2-negative breast cancer

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of palbociclib within its marketing authorisation for treating metastatic hormone receptor-positive, HER2-negative breast cancer.

Background

Breast cancer arises from the tissues of the ducts or lobules of the breast. Metastatic breast cancer describes disease that has spread to another part of the body, such as the bones, liver, or lungs.

In 2014 in England, around 46,417 people were diagnosed with breast cancer, and there were approximately 9,554 deaths from breast cancer [1,2]. The 5-year survival rate for people with metastatic breast cancer in England is 15%[3]. Approximately 5% of women with invasive breast cancers have locally advanced or metastatic disease when they are diagnosed[4], and around 35% of people with early or locally advanced disease will progress to metastatic breast cancer in the 10 years following diagnosis[5,6].

Current treatments for metastatic breast cancer aim to relieve symptoms, prolong survival and maintain a good quality of life with few adverse events. Treatment may depend on whether the cancer cells have particular receptors (hormone receptor status or HER2 status), the extent of the disease and previous treatments. NICE Clinical Guideline 81 recommends that endocrine therapy should be offered as first-line treatment for the majority of people with hormone receptor-positive metastatic breast cancer. In clinical practice, people who are post-menopausal with hormone receptor-positive metastatic breast cancer often receive first-line treatment with an aromatase inhibitor (anastrozole or letrozole). People who are pre- or peri-menopausal will receive first-line treatment with tamoxifen and ovarian suppression if they have not previously received tamoxifen. Chemotherapy is usually offered as first-line treatment only for people with hormone-receptor positive advanced breast cancer whose disease is imminently life-threatening or requires early relief of symptoms because of significant visceral organ involvement, providing they understand and are prepared to accept the toxicity.

The technology

Palbociclib (Ibrance, Pfizer) is a selective, small-molecule inhibitor of cyclin-dependent kinases 4 and 6, which prevents DNA synthesis by prohibiting progression of the cell cycle from G1 to S phase. Palbociclib is taken orally.

Palbociclib does not currently have a marketing authorisation in the UK. It has been studied in a clinical trial in combination with letrozole compared with placebo and letrozole in post-menopausal women with previously untreated metastatic hormone receptor–positive, HER2-negative breast cancer. Palbociclib has also been studied in a clinical trial in combination with fulvestrant compared with placebo and fulvestrant in people with metastatic hormone receptor–positive, HER2-negative breast cancer that has relapsed or progressed during prior endocrine therapy.

Intervention(s)	Palbociclib in combination with an aromatase inhibitor
Population(s)	Post-menopausal people with metastatic, hormone receptor-positive, HER2-negative breast cancer previously untreated in the metastatic setting.
Comparators	Aromatase inhibitors (such as letrozole or anastrozole)
Outcomes	The outcome measures to be considered include: • overall survival • progression free survival • 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 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: 'Bevacizumab in combination with capecitabine for the first-line treatment of metastatic breast cancer' (2012). NICE Technology Appraisal guidance 263. Review date June 2015. Review decision, static list. 'Bevacizumab in combination with a taxane for the first-line treatment of metastatic breast cancer' (2011). NICE Technology Appraisal 214. Guidance on static list. 'Fulvestrant for the treatment of locally advanced or metastatic breast cancer' (2011). NICE Technology Appraisal 239. Review date Nov 2014. Review decision, static list 'Gemcitabine for the treatment of metastatic breast cancer' (2007). NICE technology Appraisal 116. Review date, May 2010. Review decision, static list. Appraisals in development (including suspended appraisals): 'Sunitinib in combination with capecitabine within its licensed indication for the treatment of advanced and/or metastatic breast cancer'. NICE Technology Appraisal guidance [ID319]. Suspended. 'Sunitinib in combination with a taxane within its licensed indication for the first line treatment of advanced and/or metastatic breast cancer'. NICE Technology Appraisal guidance [ID58]. Suspended. Related Guidelines: Familial breast cancer: Classification and care of people at risk of familial breast cancer and management of breast cancer and related risks in people with a family history of breast cancer (2013). NICE guideline CG164. Update in progress. 'Advanced breast cancer: diagnosis and treatment' (2009). NICE guideline 81 This guidance replaces previous Technology Appraisals No. 30, 54 and 62. Review date December 2015. Update in progress.

	Related Quality Standards: 'Breast cancer' (2016) NICE quality standard 12. 'Related NICE Pathways: Advanced breast cancer (2015) NICE pathway Familial breast cancer (2015) NICE pathway Early and locally advanced breast cancer (2014) NICE pathway
Related National Policy	Department of Health (2016) 'NHS Outcomes Framework. Domain 1. NHS England (2016) 'Manual for Prescribed Specialised Services'. Chapter 105, Specialist Cancer services (adults)

References

1. Office for National Statistics (2016) Cancer registration statistics, England, 2014. Accessed July 2016.
2. Cancer Research UK (2015) Breast cancer mortality statistics. Accessed July 2016.
3. Cancer Research UK (2014) Breast cancer survival statistics. Accessed July 2016.
4. Cancer Research UK (2015) Breast cancer incidence statistics. Accessed July 2016.
5. NICE (2009) Costing report for clinical guideline 81: advanced breast cancer. Accessed September 2015.
6. Dewis R and Gribbin J (2009) Breast cancer: diagnosis and treatment, an assessment of need. Cardiff: National Collaborating Centre for Cancer. Accessed October 2015.