NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Atezolizumab for untreated, locally advanced or metastatic, triple negative, PD-L1 positive breast cancer

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of atezolizumab within its marketing authorisation for treating locally advanced or metastatic, triple negative, PD-L1 positive breast cancer that has not been previously treated.

Background

Breast cancer arises from the tissues of the ducts or lobules of the breast. The cancer is said to be 'advanced' if it has spread to other parts of the body such as the bones, liver, and lungs (metastatic cancer), or if it has grown directly into nearby tissues and cannot be completely removed by surgery.

Over 45,900 people were diagnosed with breast cancer in England in 2016, and there were approximately 9,554 deaths from breast cancer in 2016.[1,2] The 5-year survival rate for people with metastatic breast cancer in England is 15%.[3] Approximately 16% of people 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.[5]

Around 15% of breast cancers (approximately 7500 cases a year in England and Wales) are triple negative breast cancers whereby the cancer cells test negative for oestrogen and progesterone receptors (hormone receptor negative cancer) and human epidermal growth factor receptor 2 (HER2-negative cancer). It is diagnosed more frequently in younger people and people with BRCA1 mutations (a gene on chromosome 17 that normally helps to suppress cell growth, which is an inherited gene mutation that may increase the risk of breast cancer). Triple negative breast cancer can be particularly aggressive, is more likely to recur than other breast cancers, and is associated with poorer survival.[6]

Chemotherapy is the main treatment for advanced triple negative breast cancer. CG81 recommends single-agent docetaxel as a first-line treatment for people who are not suitable for anthracyclines (because they are contraindicated or because of prior anthracycline treatment). It considers combination chemotherapy for people for whom a greater probability of response is important and who understand and are likely to tolerate the additional toxicity.

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 delivered by intravenous infusion.

Atezolizumab does not currently have a marketing authorisation in the UK for treating locally advanced or metastatic, triple negative breast cancer. It has been studied in clinical trials in combination with nab-paclitaxel, compared with placebo in adults with untreated locally advanced or metastatic, triple negative breast cancer.

Intervention(s)	Atezolizumab (with nab-paclitaxel)
Population(s)	People with locally advanced or metastatic, triple negative breast cancer whose tumours have PD-L1 expression ≥1% and have not received prior chemotherapy for metastatic disease
Comparators	• Anthracycline based chemotherapy • Single agent taxane chemotherapy regimens (docetaxel and paclitaxel)
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. The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account. The use of atezolizumab is conditional on the presence of PD-L1 biomarker. The economic modelling should include the costs associated with diagnostic testing for PD-L1 in people with locally advanced or metastatic, triple negative breast cancer who would not otherwise have been tested. A sensitivity analysis should be provided without the cost of the diagnostic test. See section 5.9 of the Guide to the Methods of Technology Appraisals.
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: • Gemcitabine for the treatment of metastatic breast cancer (2007) NICE technology appraisal guidance 116. Guidance on static list. Related Guidelines: • Advanced breast cancer: diagnosis and treatment: diagnosis and treatment (2009, updated 2017) NICE guideline CG81 Related Quality Standards: • Breast cancer (2011, updated 2016) NICE quality standard QS12 Related NICE Pathways: • Advanced breast cancer (2018) NICE pathway

Related National Policy	NHS England, Manual for prescribed specialised services 2017/18: 105 – Specialist cancer services (adults) Department of Health, Improving Outcomes: A Strategy for Cancer, fourth annual report, Dec 2014 Department of Health, NHS Outcomes Framework 2016-2017 (published 2016): Domains 1, 2, 4 and 5.

References

1 Office for National Statistics (2018) Cancer registration statistics, England, 2016. Accessed October 2018.

2 Cancer research UK (2018) Breast cancer mortality statistics. Accessed October 2018.

3 Cancer Research UK (2014) Breast cancer survival statistics. Accessed October 2018.

4 Cancer Research UK (2014) Breast cancer incidence statistics. Accessed October 2018.

5 Dewis R and Gribbin J (2009) Breast cancer: diagnosis and treatment, an assessment of need. Cardiff: National Collaborating Centre for Cancer. Accessed October 2018.

6 Couch FJ, Hart SN, Sharma P et al. Inherited mutations in 17 breast cancer susceptibility genes among a large triple-negative breast cancer cohort unselected for family history of breast cancer. Journal of Clinical Oncology 2015;33(4):304-311.