NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

Single Technology Appraisal

Abiraterone for the treatment of metastatic, castrate-resistant prostate cancer following previous cytotoxic chemotherapy

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of abiraterone in combination with prednisolone within its licensed indication for the treatment of metastatic, castrate-resistant prostate cancer following previous cytotoxic chemotherapy.

Background

Prostate cancer is a disease in which tumours develop in the prostate, a gland in the male reproductive system. It is the most common cancer in men in England and Wales, with over 32,000 new diagnoses and over 9,000 deaths from prostate cancer recorded in 2007. The incidence of prostate cancer increases with age. The majority of men have histological evidence of prostatic cancer by age 80 but are more likely to die of unrelated causes. The cause of prostate cancer is thought to be multi-factorial, involving both environmental and genetic factors

Prostate cancer growth is stimulated by androgens (male sex hormones, such as testosterone). NICE clinical guideline 58 ('Prostate cancer') states that men with localised disease should be managed with active surveillance, surgical removal of the prostate (known as prostatectomy) or high-dose radical radiotherapy. However, once the cancer has become metastatic (that is, once the cancer has spread to other parts of the body), it is unlikely that it will be able to be cured, though the progression of the cancer can be slowed with treatment. Stopping the body making testosterone can slow the growth of the cancer, or even shrink it. Men with prostate cancer may therefore receive hormonal therapy to reduce androgen levels. Standard hormonal treatments for metastatic disease are orchidectomy (surgical removal of the testes, also known as 'surgical castration') or use of a gonadotrophin-releasing hormone analogue such as goserelin, leuprorelin or triptorelin (also known as 'medical castration').

It is estimated that 55% to 60% of men with prostate cancer will develop metastatic disease. More than 90% of men with metastatic prostate cancer initially respond to hormonal therapy. However, the disease will eventually become refractory to standard hormonal therapy and therefore alternative treatment strategies are required.

NICE Technology Appraisal No. 101 recommends docetaxel as a treatment option for men with hormone-refractory prostate cancer who have a Karnofsky performance-status score of 60% or more. For men with metastatic hormone-refractory prostate cancer that has progressed during or after a docetaxel-based treatment, there are currently limited treatment options available. Treatment options include mitoxantrone with or without steroids such as prednisolone. Patients may also receive a combination of palliative treatments, which can include radiotherapy, radiopharmaceuticals, analgesics, bisphosphonates, further hormonal therapies and corticosteroids.

The technology

Abiraterone (Zytiga, Janssen) is a selective androgen biosynthesis inhibitor. Abiraterone blocks cytochrome P17 (an enzyme thought to play a role in the production of testosterone), thereby stopping the androgen synthesis by the adrenals, prostate and within the tumour. It is administered orally.

Abiraterone does not yet have a UK marketing authorisation. In July 2011 the EMA Committee for Medicinal Products for Human Use adopted a positive opinion, recommending the granting of a marketing authorisation for abiraterone in combination with prednisolone, for the treatment of metastatic castration resistant prostate cancer in adult men whose disease has progressed on or after a docetaxel-based chemotherapy regimen.

Intervention(s)	Abiraterone in combination with prednisolone
Population(s)	Men with metastatic, castrate-resistant prostate cancer whose disease has progressed on or after docetaxel-based chemotherapy
Comparators	• Mitoxantrone alone or in combination with prednisolone • Best supportive care (this may include radiotherapy, radiopharmaceuticals, analgesics, bisphosphonates, further hormonal therapies and corticosteroids)
Outcomes	The outcome measures to be considered include: • Overall survival • Progression-free survival • Response rate • Prostate specific antigen (PSA) response • 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. If evidence allows, consideration will be given to subgroups defined by • baseline ECOG status • extent of prior taxane exposure • time since taxane treatment
Related NICE recommendations	Related Technology Appraisals: Technology Appraisal No. 101, Jun 2006, 'Docetaxel for the treatment of hormone refractory prostate cancer', Review date June 2013. Technology Appraisal in Preparation, 'Cabazitaxel for the second line treatment of hormone refractory, metastatic prostate cancer', Earliest anticipated date of publication TBC. Related Guidelines: Cancer Service Guidance Urological Cancer, Sep 2002, Improving outcomes in urogenital cancers', Anticipated review date TBC, Clinical Guideline No. 58, Feb 2008, 'Prostate cancer: diagnosis and treatment', Anticipated review date Feb 2011. Related Interventional Procedures: Interventional Procedure Guidance No. 258, Apr 2008, 'Intraoperative red blood cell salvage during radical prostatectomy or radical cystectomy'. Interventional Procedure Guidance No. 193, Nov 2006, 'Laparoscopic radical prostatectomy'. Interventional Procedure Guidance No. 145, Nov 2005, 'Crytotherapy as a primary treatment for prostate

	cancer'. Interventional Procedure Guidance No. 119, May 2005, 'Crytotherapy for recurrent prostate cancer'. Interventional Procedure Guidance No. 118, Mar 2005, 'High-intensity focused ultrasound for prostate cancer'.