

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Tivozanib for treating renal cell carcinoma

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of tivozanib within its marketing authorisation for renal cell carcinoma.

Background

Renal cell cancer (RCC) is a cancer that usually originates in the lining of the tubules of the kidney (the smallest tubes inside the nephrons) that help filter the blood and make urine. RCC is the most common type of kidney cancer (approximately 90% of the cases).ⁱ There are several different types of RCC, with the main ones divided into 5 categories: clear cell, papillary (types 1 and 2), chromophobe, oncocytic and collecting duct carcinoma. Clear cell is the most common form of RCC accounting for approximately 80–90% of cases.ⁱⁱ

In 2014, 9,023 new kidney cancer cases were diagnosed in England.ⁱⁱⁱ In 2014, approximately 44% of people diagnosed with kidney cancer had stage III or IV disease and 25% had stage IV disease.^{iv} The 5-year survival rate for metastatic RCC is approximately 10%.^v

The aim of treatment is to stop the growth of new blood vessels within a tumour. In untreated RCC NICE technology appraisal guidance 169 recommends sunitinib a 'first-line treatment option for people with advanced and/or metastatic renal cell carcinoma who are suitable for immunotherapy and have an Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1.' NICE technology appraisal guidance 215 recommends pazopanib as a first-line treatment option for people with advanced renal cell carcinoma and who have not received prior cytokine therapy and have an Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1.

After failure of prior systemic treatment with a tyrosine kinase inhibitor or cytokine, NICE technology appraisal guidance 333 recommends axitinib. Because the remit referred to NICE by the Department of Health for axitinib only includes adults who have been previously treated with sunitinib, the use of axitinib with other tyrosine kinase inhibitors, such as pazopanib (NICE technology appraisal guidance 215) is not subject to statutory funding. NICE technology appraisal guidance 417 recommends nivolumab as an option for previously treated advanced renal cell carcinoma in adults. Everolimus is available in England for metastatic RCC through the Cancer Drugs Fund (at the time the final scope was written) for people who have had prior treatment with only one previous tyrosine kinase inhibitor, and where axitinib is contraindicated or there is excessive toxicity to axitinib and no evidence of disease progression. Everolimus is subject to ongoing NICE CDF transition

review [ID1016]. Cabozantinib is subject to ongoing NICE appraisal for previously treated advanced RCC.

The technology

Tivozanib (Fotivda, EUSA Pharma) is a selective inhibitor of vascular endothelial growth factor (VEGF) receptors pathway. Inhibition of VEGF driven angiogenesis has been demonstrated to reduce vascularisation of tumours, thereby suppressing tumour growth. Tivozanib is administered orally.

Tivozanib does not currently have a marketing authorisation in the UK. It has been studied in a clinical trial compared with sorafenib in adults with recurrent or metastatic RCC who have untreated disease or who have received no more than 1 prior systemic regimen for metastatic RCC. It is also being studied in a clinical trial compared with sorafenib in adults with metastatic RCC whose disease has not responded to 2 or 3 prior systemic regimens.

Intervention(s)	Tivozanib
Population(s)	Adults with recurrent or metastatic renal cell carcinoma
Comparators	<p>Untreated disease:</p> <ul style="list-style-type: none"> • Sunitinib • Pazopanib • Immunotherapy (interferon-alfa, interleukin-2) <p>Previously treated disease:</p> <ul style="list-style-type: none"> • Axitinib • Nivolumab • Everolimus (NICE guidance is in development, funded by the Cancer Drugs Fund in the interim) • Cabozantinib (subject to ongoing NICE appraisal [ID931]) • Best supportive care
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.

<p>Economic analysis</p>	<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> <p>The availability of any patient access schemes for the intervention and comparator technologies should be taken into account.</p>
<p>Other considerations</p>	<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>
<p>Related NICE recommendations and NICE Pathways</p>	<p>Related Technology Appraisals:</p> <p>‘Sunitinib for the first-line treatment of advanced and/or metastatic renal cell carcinoma’ (2009). NICE technology appraisal 169. Guidance on the static list.</p> <p>‘Pazopanib for the first-line treatment of advanced renal cell carcinoma’ (2011) NICE technology appraisal 215. Guidance on the static list.</p> <p>‘Axitinib for treating advanced renal cell carcinoma after failure of prior systemic treatment’ (2015). NICE technology appraisal 333. Review date to be confirmed.</p> <p>‘Cabozantinib for treating renal cell carcinoma’. NICE technology appraisals guidance [ID931]. Publication expected June 2017.</p> <p>‘Everolimus for the second-line treatment of advanced renal cell carcinoma’ (2011). NICE technology appraisal guidance 219. Everolimus subject to ongoing NICE CDF transition review [ID1016], expected date of publication February 2017.</p> <p>‘Bevacizumab (first-line), sorafenib (first- and second line), sunitinib (second-line) and temsirolimus (first-line) for the treatment of advanced and/or metastatic renal cell carcinoma’ (2009). NICE technology appraisal guidance 178. Review date to be confirmed.</p>

	<p>'Nivolumab for previously treated advanced renal cell carcinoma'. NICE technology appraisal guidance 417. Review date November 2019</p> <p>Terminated appraisals</p> <p>'Pazopanib for the second line treatment of metastatic renal cell carcinoma (discontinued)' NICE technology appraisals guidance [ID70].</p> <p>Appraisals in development (including suspended appraisals)</p> <p>'Axitinib, everolimus, sorafenib and sunitinib for treated advanced or metastatic renal cell carcinoma'. NICE technology appraisals guidance [ID897]. Suspended appraisal.</p> <p>'Cabozantinib for previously treated advanced renal cell carcinoma'. NICE technology appraisal guidance [ID931]. Publication expected June 2017</p> <p>'Lenvatinib in combination with everolimus for previously treated advanced renal cell carcinoma' Proposed NICE technology appraisal [ID1029]. Publication expected December 2017.</p> <p>Related Guidelines:</p> <p>'Suspected cancer: recognition and referral' (2015) NICE guideline 12</p> <p>'Improving outcomes in urological cancers' (2002). NICE guideline CSGUC. Review date to be confirmed.</p> <p>Related Interventional Procedures:</p> <p>'Irreversible electroporation for treating renal cancer' (2013). NICE interventional procedures guidance 443.</p> <p>'Laparoscopic cryotherapy for renal cancer' (2011). NICE interventional procedures guidance 405.</p> <p>'Percutaneous cryotherapy for renal cancer' (2011). NICE interventional procedures guidance 402.</p> <p>'Percutaneous radiofrequency ablation for renal cancer' (2010). NICE interventional procedures guidance 353.</p> <p>Related NICE Pathways:</p> <p>Renal cancer (2016) NICE pathway</p>
<p>Related National Policy</p>	<p>NHS England (January 2017) National Cancer Drugs Fund List.</p> <p>https://www.england.nhs.uk/cancer/cdf/cancer-drugs-fund-list/</p>

	<p>NHS England (May 2016) Manual for prescribed specialised services. Section 15. https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2016/06/pss-manual-may16.pdf</p> <p>Department of Health (April 2016) NHS Outcomes Framework 2016-2017. Domain 1. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017</p> <p>Independent Cancer Taskforce (2015) Achieving world-class cancer outcomes: a strategy for England 2015-2020 http://www.cancerresearchuk.org/about-us/cancer-strategy-in-england</p> <p>Department of Health (2014) The national cancer strategy: 4th annual report https://www.gov.uk/government/publications/the-national-cancer-strategy-4th-annual-report</p> <p>NHS England (2013/14) B14. Specialised Urology. NHS Standard Contract. http://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-b/b14/</p>
--	---

References

- ⁱ American Cancer Society. [Kidney Cancer \(Adult\) - Renal Cell Carcinoma](#). Accessed October 2016.
- ⁱⁱ Patient.co.uk [Renal Cancer](#). Accessed October 2016.
- ⁱⁱⁱ Office for National Statistics [Cancer Registration Statistics](#). Accessed October 2016.
- ^{iv} Cancer Research UK [Kidney cancer incidence statistics](#). Accessed October 2016.
- ^v GP Notebook [Clear Cell Cancer](#). Accessed October 2016.