EE447

Budget impact analysis of tepotinib in England for patients with advanced non-small cell lung cancer (aNSCLC) harboring *MET* exon 14 (*MET*ex14) skipping

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CONCLUSIONS

- **Tepotinib is the first and currently only MHRA-approved and NICE-recommended targeted treatment option for patients with aNSCLC harboring *MET*ex14 skipping**
- **Tepotinib is estimated to have a budget impact between £7m and £12m a year, while also reducing NHS administration costs by up to £5.9m over 5 years by replacing chemotherapy and immunotherapy infusions**
- **The budget impact results will be different when accounting for confidential discounts for tepotinib and comparator treatments. Furthermore, results could vary depending on the distribution of patients treated at 1L versus 2L+. Therefore, the results could change as more data become available on the use of tepotinib in clinical practice**
- **Future research could also investigate the changes in healthcare resource use (e.g. nurse time, infusion chair time and hospital attendance) by the introduction of oral tepotinib for patients with aNSCLC harboring *MET*ex14 skipping**

INTRODUCTION

- Tepotinib, an oral, once-daily and highly selective MET inhibitor, is approved by the MHRA and recommended by NICE for the treatment of aNSCLC with *MET*ex14 skipping in adult patients[1,2]
- In the absence of any other approved MET inhibitor, the previous standard of care in England for the treatment of patients with *MET*ex14 skipping NSCLC was the same as with patients without driver mutations (known as wildtype NSCLC). This standard of care includes immunotherapy with or without chemotherapy, depending on line of therapy, histology, and PD-L1 expression[3]
- Since NICE recommended tepotinib for reimbursement in the treatment of *MET*ex14 skipping aNSCLC, it is necessary to understand the budget impact to the NHS of introducing tepotinib to the treatment paradigm in England

OBJECTIVE

- To evaluate the economic impact to NHS England of introducing tepotinib as a treatment for patients with *MET*ex14 skipping aNSCLC

METHODS

- A budget impact model was developed to compare the costs associated with the previous standard of care in aNSCLC without driver mutations in England (multiple immunotherapy and/or chemotherapy treatments) versus the costs of introducing tepotinib to the treatment paradigm for patients with *MET*ex14 skipping NSCLC, over a 5-year time horizon
- The data sources and assumptions used for each input are summarized in **Table 1**

Table 1. Inputs and data sources used in the budget impact analysis

Input	Data source
Eligible population	
New cases of lung cancer in England	• Cancer Registration Statistics, England 2019[4]
Percentage of lung cancer cases which are NSCLC	• Cancer Registration Statistics, England 2019[4]
Percentage of patients diagnosed at advanced stage	• Cancer Registration Statistics, England 2019[4]
Prevalence of *MET*ex14 skipping	• Awad MM, et al. 2016[5]
Costs	
Treatment costs	• BNF[6] • eMIT[7]
Average treatment durations	• Published clinical trial data • Previous NICE submissions
Administration costs	• NHS reference costs 18/19[8] • PSSRU Unit Costs of Health and Social Care 2020[9]
MET testing costs	• Assumption of the additional cost of testing patients for *MET*ex14 skipping via NGS
Other	
Current and future market shares	• Clinical expert feedback and assumptions • VISION study for 1L versus 2L tepotinib treatment

Eligible population

- The yearly eligible population was estimated using the number of new patients with aNSCLC per year in England, and the estimated prevalence of *MET*ex14 skipping in NSCLC[4,5]
- The incidence of aNSCLC was assumed to remain constant from Year 1 to 5, as was the detection and prevalence of *MET*ex14 skipping

Inclusion of costs

- Costs included drug list prices, drug administration costs and oncogene testing costs, based on published sources and assumptions
- Treatment costs were sourced from the BNF and eMIT, and the cost-per-treatment course was calculated using mean/median treatment durations from clinical trials. Product licenses and NICE recommendations informed treatment dosing information
- Administration costs were sourced from NHS Reference Costs and PSSRU Unit Costs of Health and Social Care. Tepotinib is administered as a once-daily, oral dosing schedule of 500 mg (450 mg active moiety) at home, and will be dispensed to patients in a hospital pharmacy setting, and so does not incur infusion administration costs unlike chemotherapy and immunotherapy infusions. Instead, only costs for pharmacy dispensing were included for tepotinib

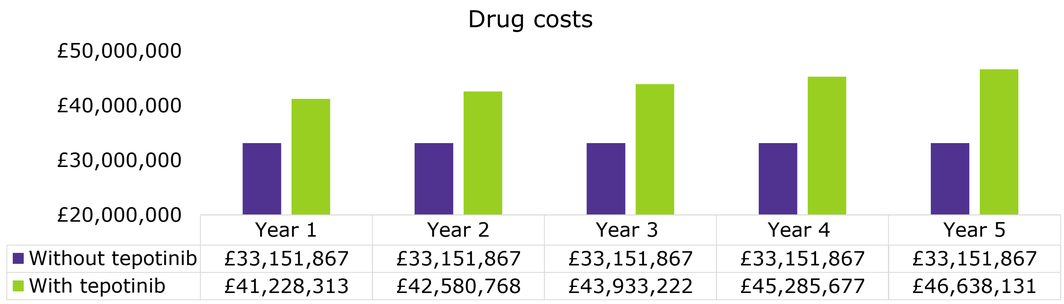
Market shares

- Current and future market shares, including for uptake of tepotinib, were based on assumptions and clinical expert opinion, with patients assumed to either be treated at 1L or 2L in line with the MHRA label for tepotinib

RESULTS

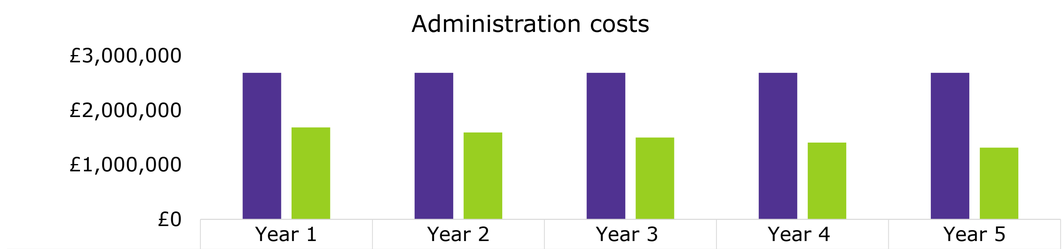
- Approximately 756 patients per year with *MET*ex14 skipping aNSCLC are eligible for treatment with tepotinib in England
- Introducing tepotinib into the treatment paradigm is estimated to cost NHS England £7.1m in Year 1, increasing to £12.1m by Year 5, for a total of £47.9m over 5 years, assuming list prices (**Figures 1–4**)
- However, replacing chemotherapy and immunotherapy infusions with tepotinib is estimated to reduce administration costs for the NHS by £5.9m over 5 years (**Figure 2**)
- The budget impact of tepotinib in England is expected to be substantially below the threshold set by NICE of £20m in any of the first 3 years (assuming list prices), however the budget impact of tepotinib is expected to be lower when accounting for confidential discounts of tepotinib and comparators

Figure 1. Drug costs for the scenarios with and without tepotinib



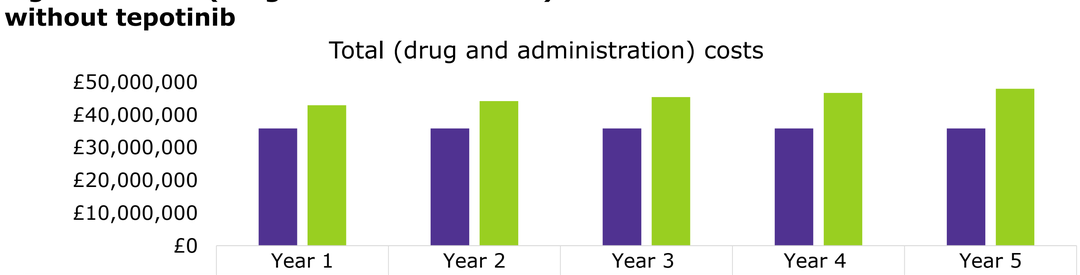
	Year 1	Year 2	Year 3	Year 4	Year 5
Without tepotinib	£33,151,867	£33,151,867	£33,151,867	£33,151,867	£33,151,867
With tepotinib	£41,228,313	£42,580,768	£43,933,222	£45,285,677	£46,638,131

Figure 2. Administration costs for the scenarios with and without tepotinib



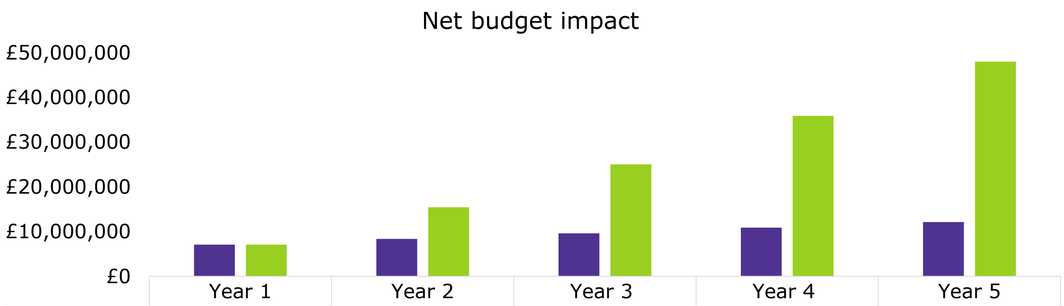
	Year 1	Year 2	Year 3	Year 4	Year 5
Without tepotinib	£2,685,670	£2,685,670	£2,685,670	£2,685,670	£2,685,670
With tepotinib	£1,684,737	£1,591,793	£1,498,848	£1,405,904	£1,312,959

Figure 3. Total (drug and administration) costs for the scenarios with and without tepotinib



	Year 1	Year 2	Year 3	Year 4	Year 5
Without tepotinib	£35,837,536	£35,837,536	£35,837,536	£35,837,536	£35,837,536
With tepotinib	£42,913,051	£44,172,561	£45,432,071	£46,691,580	£47,951,090

Figure 4. Net budget impact of introducing tepotinib



	Year 1	Year 2	Year 3	Year 4	Year 5
Incremental	£7,075,514	£8,335,024	£9,594,534	£10,854,044	£12,113,554
Cumulative	£7,075,514	£15,410,538	£25,005,072	£35,859,116	£47,972,670

Abbreviations: 1L, first line; 2L, second line; 2L+, second or later line; aNSCLC, advanced non-small cell lung cancer; BNF, British National Formulary; eMIT; electronic Market Information Tool; MET, mesenchymal–epithelial transition factor; *MET*ex14, *MET* exon 14; MHRA, Medicines and Healthcare products Regulatory Agency; NGS, Next Generation Sequencing; NHS, National Health Service; NICE, National Institute for Health and Care Excellence; PD-L1, programmed death-ligand 1; PSSRU, Personal Social Services Research Unit.

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