

A comparison of utility values generated using different methods from the Phase II VISION trial of tepotinib for patients with non-small cell lung cancer (NSCLC) harboring *MET* exon 14 (*MET*ex14) skipping

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CONCLUSIONS

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- A range of methods are available to generate health state utility values (HSUVs) from health-related quality of life (HRQoL) data collected in clinical trials
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- This analysis found high correlation between the well-established EQ-5D, and novel QLU-C10D measures from data collected in the VISION trial of tepotinib for patients with NSCLC harboring *MET*ex14 skipping
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- Further research is required to understand when it is appropriate to use each method to derive HSUVs, and the resulting impact on economic modeling and health technology assessment



INTRODUCTION

- HRQoL data are routinely used to generate utilities for economic modeling and health technology assessment (HTA), with a range of methods available to calculate HSUVs
- Resultant values may depend on the:

1. Questionnaire administered

2. Value set applied

3. Statistical analysis performed

- Given HSUVs can influence the results of economic analyses, it is important to understand how values have been derived for HTA submissions
- The Phase II VISION study (NCT02864992) of tepotinib in patients with NSCLC harboring *MET*ex14 skipping captured both EQ-5D-5L and EORTC QLQ-C30 responses.¹ The VISION trial is the first to report patient reported outcomes for patients with NSCLC harboring *MET*ex14 skipping



OBJECTIVES

- To compare HSUVs generated from two different HRQoL questionnaires collected in the tepotinib VISION study



RESULTS

- From 273 patients with *MET*ex14 skipping NSCLC at the February 2021 data cut-off, 1,545 EQ-5D-5L and 1,546 EORTC QLQ-C30 responses were available for analysis
- In general, EQ-5D produced higher estimated HSUVs than EORTC QLU-C10D (**Table 1**)
- The difference between estimates was <0.02 (2 decimal places) for all health states across models
- Progression-based utilities were similar across progression definitions (INV, IRC) particularly in the pre-progression health state, with differences only appearing at the third decimal place
- EORTC QLU-C10D estimated greater utility in TTD categories closest to death (-0.0052 vs -0.0178)

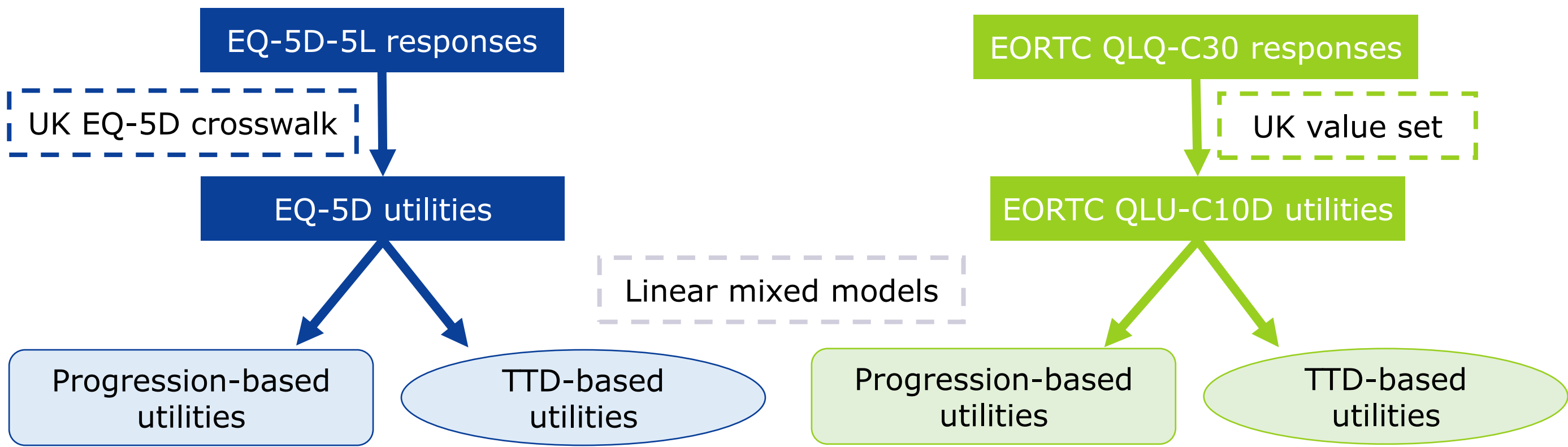
Table 1. EQ-5D and EORTC QLU-C10D LMM HSUVs by progression- and TTD-based analyses

Health state	EQ-5D-5L	EORTC QLU-C10D	Difference
Progression-based analysis (INV definition)			
Pre-progression	0.709	0.692	0.017
Post-progression	0.646	0.648	-0.001
Progression-based analysis (IRC definition)			
Pre-progression	0.708	0.693	0.016
Post-progression	0.655	0.651	0.004
TTD analysis – TTD model 1 categories			
≤5 weeks to death	0.616	0.621	-0.005
>5 to ≤15 weeks to death	0.672	0.652	0.019
>15 to ≤30 weeks to death	0.695	0.686	0.009
>30 weeks to death	0.719	0.704	0.015
TTD analysis – TTD model 2 categories			
<28 days to death	0.597	0.615	-0.018
≥28 to <182 days to death	0.689	0.668	0.021
≥182 to <364 days to death	0.709	0.703	0.006
≥364 days to death	0.715	0.699	0.016



METHODS

- All analyses were performed in the statistical software, R²
- EQ-5D utilities were derived via the UK EQ-5D crosswalk value set.^{3,4} EORTC QLU-C10D utilities were derived from EORTC CLQ-C30 responses using the UK value set⁵
- To account for repeated within-patient measures, linear mixed models (LMM) were fitted to the data⁶
- Utilities were derived based on progression status (defined by investigator [INV] or independent review committee [IRC]) and time-to-death (TTD)
- Correlation between paired observations of EQ-5D-5L and EORTC QLU-C10D was assessed using Pearson's product moment correlation coefficient (PMCC)



- When comparing paired values (defined as observations from each questionnaire taken within 7 days), a statistically significant correlation ($p < 0.001$) was observed between EQ-5D and EORTC QLU-C10D HSUVs (PMCC: 0.693; 95% CI: 0.667, 0.718) (**Figure 1**)
- The PMCC was affected by the number of observations reporting a utility of 1, i.e. perfect health from the EQ-5D questionnaire

Figure 1. Cross plot of paired observations from the VISION trial

