Economic evaluation of tislelizumab for the treatment of second-line oesophageal squamous cell carcinoma: a lifetime partition survival model

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ABSTRACT

Objective: Tislelizumab (TIS) is approved for treatment of advanced unresectable or metastatic oesophageal squamous cell carcinoma (OSCC) after prior platinum-based chemotherapy in Europe. In the RATIONALE-302 trial, TIS demonstrated a statistically significant and clinically meaningful improvement in overall survival (OS) versus investigator chosen chemotherapy (ICC) in patients with OSCC who had received prior systemic treatment (excluding prior PD-(L)1 inhibitors). This economic evaluation compared long-term outcomes of TIS versus nivolumab (NIV), the only other currently approved immune-oncology (IO) treatment for this indication in Europe, in terms of benefits (quality-adjusted life-years [QALYs]) and costs.

Methods: A 3-state partitioned survival model with a lifetime horizon and one-week cycle length was developed from a UK National Health Service (NHS) perspective to compare TIS with NIV. Health state occupation was determined via extrapolations of OS and progression-free survival (PFS) from RATIONALE-302 for TIS, and survival estimates were derived via an indirect treatment comparison for NIV. Health state utility values were derived from RATIONALE-302. Resource use costs were sourced from the national schedule of NHS costs, where possible. A 3.5% discount rate was used for costs and outcomes.

Results: If assuming price parity, the incremental cost-effectiveness ratio (ICER) for TIS versus NIV was £16,589/QALY gained, with total discounted QALYs higher for TIS versus NIV (TIS: 1.02, NIV: 0.86). Scenario analysis demonstrated that decreasing or increasing TIS price by 10% resulted in ICERs of £2,715/QALY gained and £30,462/QALY gained, respectively. ICER estimates were most sensitive to the NIV PFS hazard ratio (HR) and drug acquisition costs, while costs associated with monitoring patients in the progression-free health state had minimal impact on the results.

Conclusions: Overall, the model results indicate that TIS provides long-term benefits versus NIV. The base case analysis found that at a willingness-to-pay threshold of £30,000/QALY gained, TIS is a cost-effective treatment option for patients with previously treated OSCC.

Information to be submitted on ISPOR website

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