

Cost-Effectiveness and Value of Information Analyses of Sotorasib vs. Docetaxel in Previously Treated Patients With Advanced Non-Small Cell Lung Cancer With KRAS G12C Mutation.

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INTRODUCTION

- Sotorasib is a first-in-class oral KRAS G12C inhibitor that showed progression-free survival benefit and an improved safety profile over docetaxel in the CodeBreak 200 trial.¹

OBJECTIVE

- To evaluate the cost-effectiveness of sotorasib vs. docetaxel and to estimate the cost of uncertainty and the potential value of collecting additional information using value of information analysis.

METHODS

- A 3-state partitioned survival model (progression-free, progressed, death) over a 5-year time horizon and from a US payer perspective was developed using Tree Age Pro.²
- Progression-free and overall survival estimates were determined from the Kaplan-Meier curves of the CodeBreak 200 trial using the best-fitting parametric distribution in R.³
- Costs of drugs were sourced from Redbook, administration costs from Physician Fee Schedule, cost of adverse events management, utilities, and disutilities from published literature.⁴⁻⁷
- One-way and probabilistic sensitivity analyses (PSA) accounted for model uncertainties. Discounting- 3% per year.
- PSA results were used to calculate the net health benefits (NHBs) and net monetary benefits (NMBs) forgone and the population expected value of perfect information (EVPI).⁸

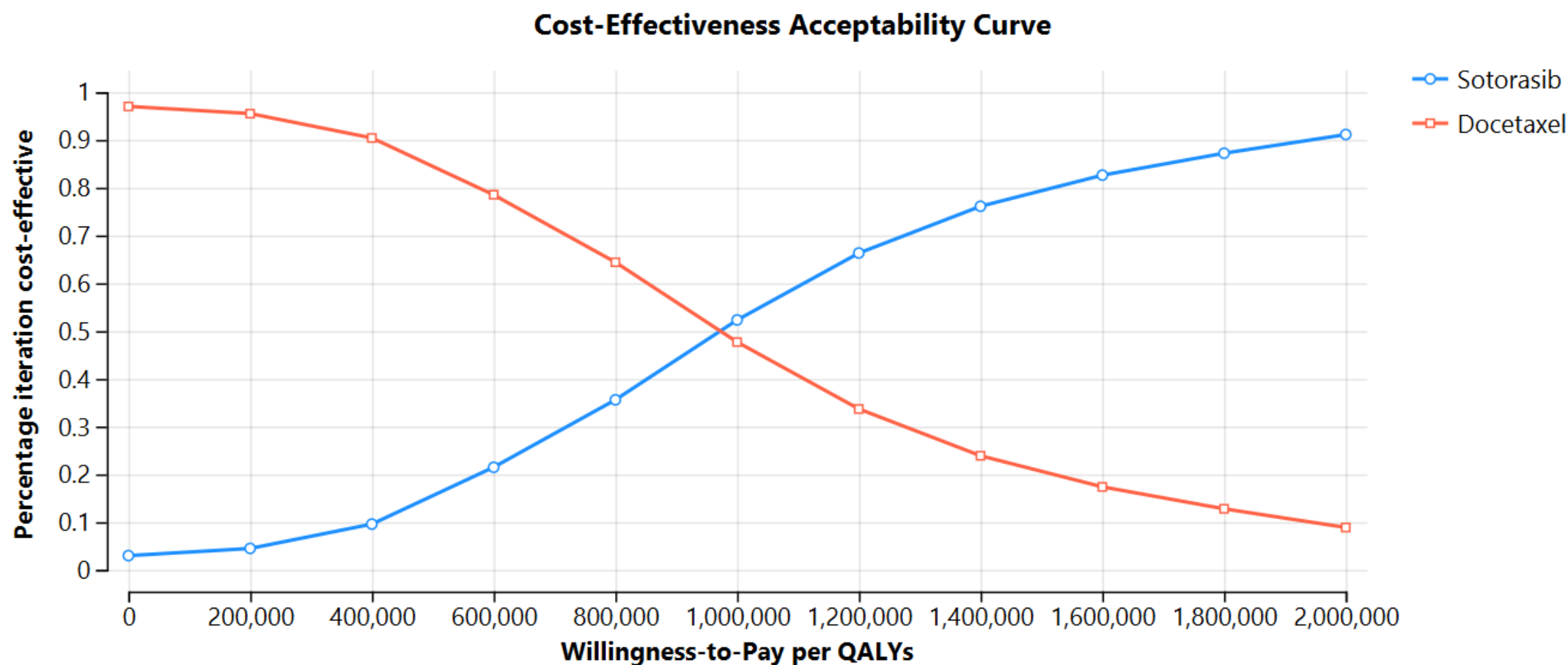
RESULTS

- Sotorasib yielded an increase of 0.35 QALY at an incremental cost of \$329,619 (Table 1).
- The probability of being cost-effective at a willingness to pay threshold of \$150,000 per QALY was 3% vs 97% for sotorasib and docetaxel respectively (Figure 1).

Table 1. Base-Case Analysis and Probabilistic Sensitivity Analysis For Sotorasib vs. Docetaxel

Base-Case Analysis (Probabilistic Sensitivity Analysis)		
	Docetaxel	Sotorasib
Cost (\$)	204,532 (203,227)	534,151 (535,969)
QALYg	0.70 (0.69)	1.05 (1.04)
Incremental QALYg	Ref	0.35 (0.35)
Incremental Cost (\$)	Ref	329,619 (332,742)
ICUR (\$ per QALYg)	Ref	941,768 (950,691)

Figure 1. Cost-Effectiveness Acceptability Curve



- The. average per-patient NHBs and NMBs forgone were 0.061QALY and \$5019 respectively. The population EVPI was estimated to be \$627.3 million (Table 2).

Table 2. Value of Information Analysis: Expected Value of Perfect Information (EVPI)

	Per person NHB (QALYs)	Per Person NMB (\$)	Population NMB** (\$)	Population NMB (5-year time horizon) (\$)
EVPI*	0.061	5,019	125,475,000	627,375,000

*EVPI based on a willingness to pay threshold of \$150,000
**Calculated based on a yearly incidence of NSCLC with KRAS G12C mutation in the US (approximately 25,000 cases)⁹.
NHB- Net health benefit NMB- Net monetary benefit.

CONCLUSION

- Sotorasib may require a higher WTP threshold or a reduction in acquisition cost to be considered cost-effective.
- The estimated EVPI exceeds the cost of conducting another trial; future research to acquire additional evidence is considered worthwhile to inform clinical and policy decisions.

REFERENCES



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