

Cost-Effectiveness of Elranatamab Versus Physician's Choice of Treatment for Triple-Class-Exposed Multiple Myeloma in Japan

Akira Yuasa, PhD¹; Mitsuhiro Nagano, MSc¹; Yoichi Kamei, MSc²; Kengo Hatsuyama, BS³; Hiroyuki Matsuda, PhD³; Patrick Hlavacek, MPH⁴; Marco DiBonaventura, PhD⁴; Kenshi Suzuki, MD, PhD⁵

1. Japan Access & Value, Pfizer Japan Inc.; 2. Pfizer R&D Japan; 3. Real World Evidence Solutions & HEOR, IQVIA Solutions Japan G.K.; 4. Global Access & Value, Pfizer Inc.; 5. Myeloma/AL amyloid unit, Japanese Red Cross Medical Center

Objectives

Elranatamab is a bispecific antibody targeting BCMA and CD3 and is approved in Japan for the treatment of patients with triple-class-exposed (TCE) multiple myeloma (MM). This study evaluated the cost-effectiveness of elranatamab compared with physician's choice of treatment (PCT), defined as a mix of currently reimbursed combination therapies, for TCE MM in Japan.

Conclusions

From the Japanese payer perspective, elranatamab represents a cost-effective treatment option compared with physician's choice of treatment (PCT). The resulting incremental cost-effectiveness ratio was ¥2,846,021 (\$18,355) per QALY gained. Sensitivity analyses were conducted to assess parameter uncertainty, and the results were consistent across a range of assumptions. These findings provide valuable evidence to inform future decision-making and policy discussions regarding the health economic impact of TCE MM in Japan.

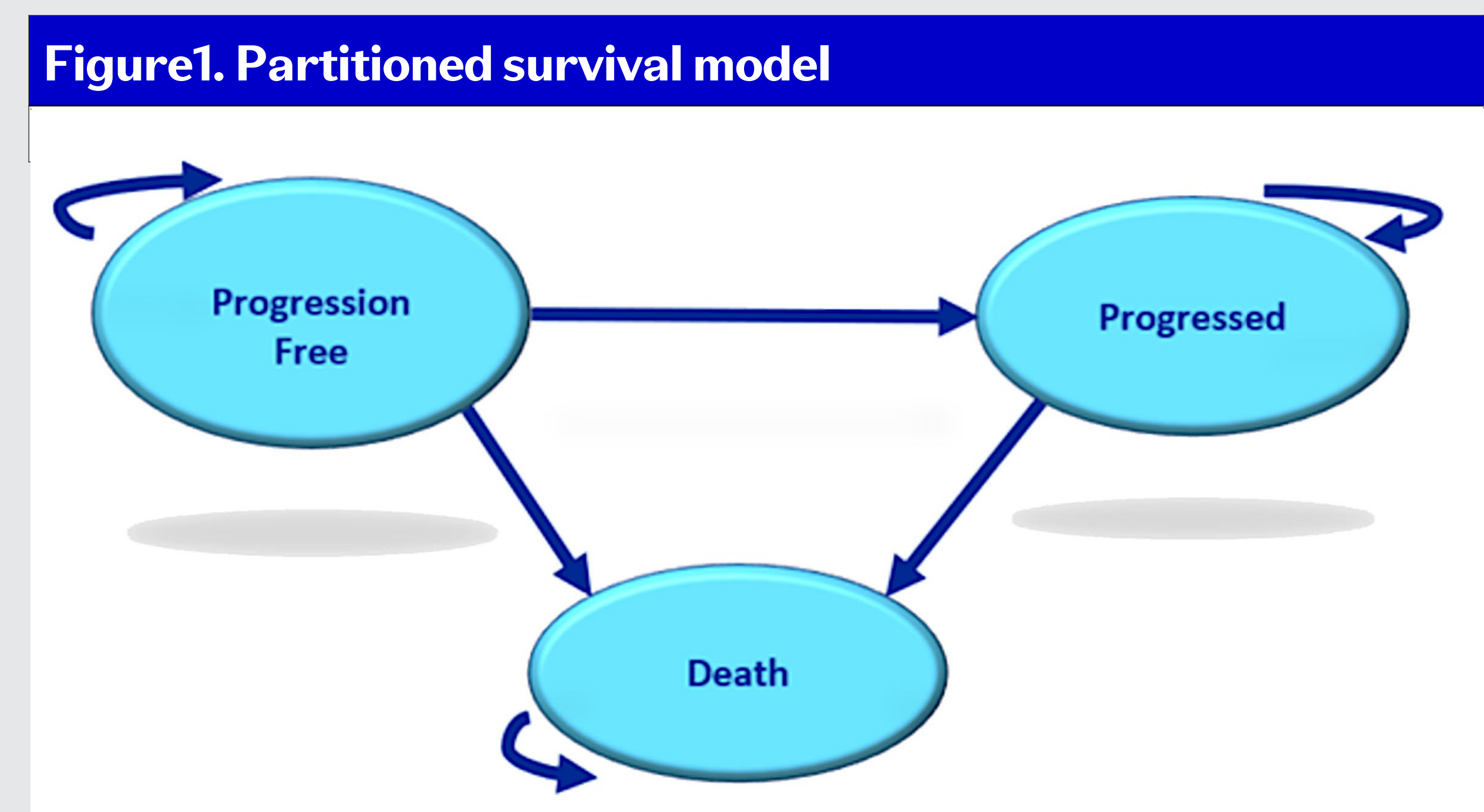
Background

- Patients with TCE MM have limited treatment options and poor clinical outcomes, representing a substantial unmet medical need ¹.
- BCMA-directed bispecific antibodies, including elranatamab, have demonstrated clinically meaningful activity in heavily pretreated patients ². However, evidence on the cost-effectiveness of these novel therapies is required to support value-based decision-making within the healthcare system.

Methods

- A partitioned survival model with three health states (progression-free, progressed disease, and death) was constructed (Figure 1). Further details are provided in the Model Structure section.
- Efficacy (overall survival [OS] and progression-free survival [PFS]) of elranatamab was derived from the MagnetisMM-3 trial ².
- Comparative efficacy versus physician's choice of treatment was estimated using an unanchored matching-adjusted indirect comparison (MAIC) with the observational LocoMMotion study ³.

- Duration of treatment (DoT) was defined as the time from treatment initiation to permanent discontinuation and was used to estimate treatment-related costs ².
- Physician interviews were conducted to inform healthcare resource utilization and cost inputs.
- Lifetime costs and outcomes were projected over a 25-year time horizon using weekly cycles from the Japanese payer perspective, applying a 2% annual discount rate and a cost-effectiveness threshold of ¥7,500,000 (USD 48,387) per QALY ⁴.
- Outcomes included life-years, QALYs, and ICER, supported by sensitivity and scenario analyses.



Model structure

- A partitioned survival model with three health states (progression-free, progressed disease, and death) was developed to estimate lifetime costs and health outcomes.
- Patients entered the model in the progression-free state and were followed over time according to PFS and OS curves.
- The proportion of patients in each health state at each model cycle was derived directly from these survival functions, with post-progression survival calculated as the difference between OS and PFS.
- The model incorporated treatment-specific costs, utilities, treatment-related adverse events, and subsequent therapies to capture differences in clinical management and healthcare resource utilization over time.
- The composition of PCT regimens was based on the treatments included in the LocoMMotion study, restricted to regimens that are approved for use in Japan³.
- Health state-specific costs and utilities were applied at each cycle to estimate cumulative life-years, quality-adjusted life-years, and total costs.

Unanchored MAIC for comparative efficacy

- The analysis was implemented in accordance with the methodology applied in prior studies and re-estimated using efficacy data with a median follow up of 28.4 months ⁵. Following MAIC adjustment, elranatamab demonstrated statistically significant improvements in both OS and PFS relative to the PCT group in LocoMMotion. The MAIC adjusted hazard ratio for OS was 0.503 (95% CI 0.326–0.775), and for PFS was 0.322 (95% CI 0.209–0.496).

Results

Base case analysis

- In the base-case analysis, elranatamab was associated with higher health benefits and higher costs compared with PCT. Elranatamab generated 2.59 QALYs compared with 0.82 QALYs for PCT, resulting in an incremental gain of 1.77 QALYs.
- Total costs were ¥24,477,750 (USD 158,053) for elranatamab and ¥19,446,094 (USD 125,563) for PCT, with an incremental cost of ¥5,031,053 (USD 32,490). The resulting incremental cost-effectiveness ratio was ¥2,846,021 per QALY gained, remaining below Japan's cost-effectiveness threshold of ¥7,500,000 (USD 48,347) per QALY.

Table 1. Base case Results

Intervention	QALYs	Inc. QALYs	Cost (JPY[USD])	Inc. Cost (JPY[USD])	ICER
Elranatamab	2.59	1.77	¥24,477,750 (\$158,053)	¥5,031,053 (\$32,490)	¥2,846,021 (\$18,355)
PCT	0.82		¥19,446,094 (\$125,563)		

Figure 2. One-Way Sensitivity Analysis

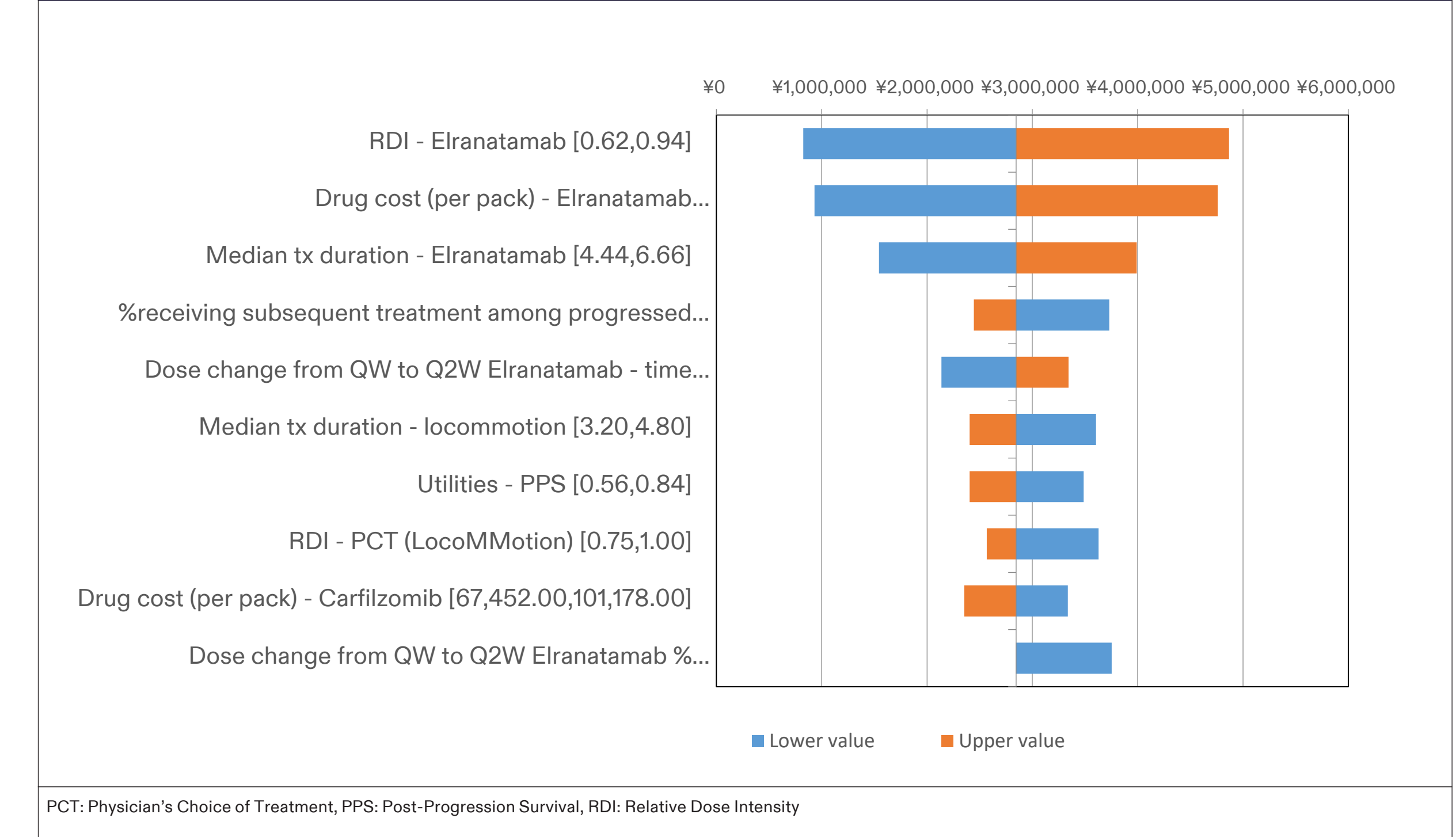
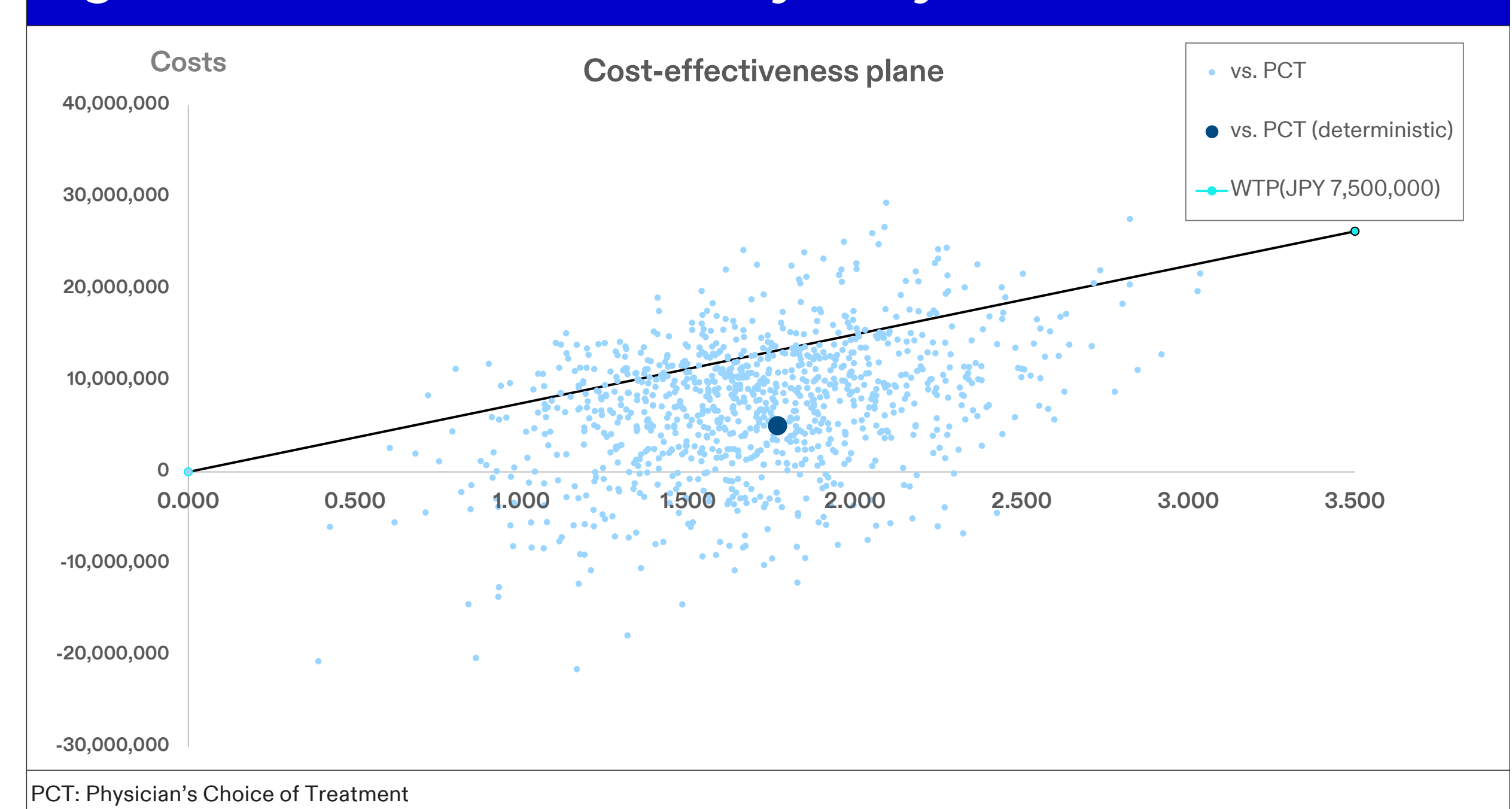


Figure 3. Probabilistic Sensitivity Analysis



Sensitivity analysis

- Figure 2 summarizes the sensitivity analyses conducted to assess uncertainty around the base-case ICER.
- In the one-way sensitivity analysis, the ICER consistently remained below Japan's cost-effectiveness threshold of ¥7,500,000 per QALY across all parameters tested.
- The largest variations were driven by parameters related to elranatamab treatment exposure, such as relative dose intensity and treatment duration, while assumptions related to health state utility values and physician's choice of treatment had a comparatively limited impact.
- In the probabilistic sensitivity analysis, which simultaneously varied all model parameters, 81% of simulations resulted in an ICER below the Japanese willingness-to-pay threshold. Overall, these findings indicate that the base-case cost-effectiveness results were largely maintained when both individual and joint parameter uncertainty were considered (Figure 3).

Discussion

- A key strength of this analysis is the incorporation of Japanese real-world clinical practice into the model through a physician survey. Information on healthcare resource utilization was collected from experienced Japanese hematologists, allowing the analysis to reflect actual clinical management and enhancing its relevance for decision-making in Japan.
- Several limitations should be noted. The physician survey relied on self-reported data from a limited number of respondents, which may not fully capture variation in clinical practice across Japan. In addition, long-term survival and treatment duration required extrapolation beyond the observed follow-up period, and uncertainty surrounding long-term outcomes remains.

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References: 1. Iida S, et al. International Journal of Hematology. 2025/10/01;122(4):465-509 2. Lesokhin AM, et al. Nat Med. 2023 Sep;29(9):2259-2267. 3. Mateos MV, et al. Leukemia. 2022 May;36(5):1371-1376. 4. Center for Outcomes Research and Economic Evaluation for Health. Guideline for Preparing Cost-Effectiveness Evaluation to the Central Social Insurance Medical Council (2024 Edition). 2024. 5. Mol et al. Curr Med Res Opin. 2024 Feb;40(2):199-207.

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