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INTRODUCTION

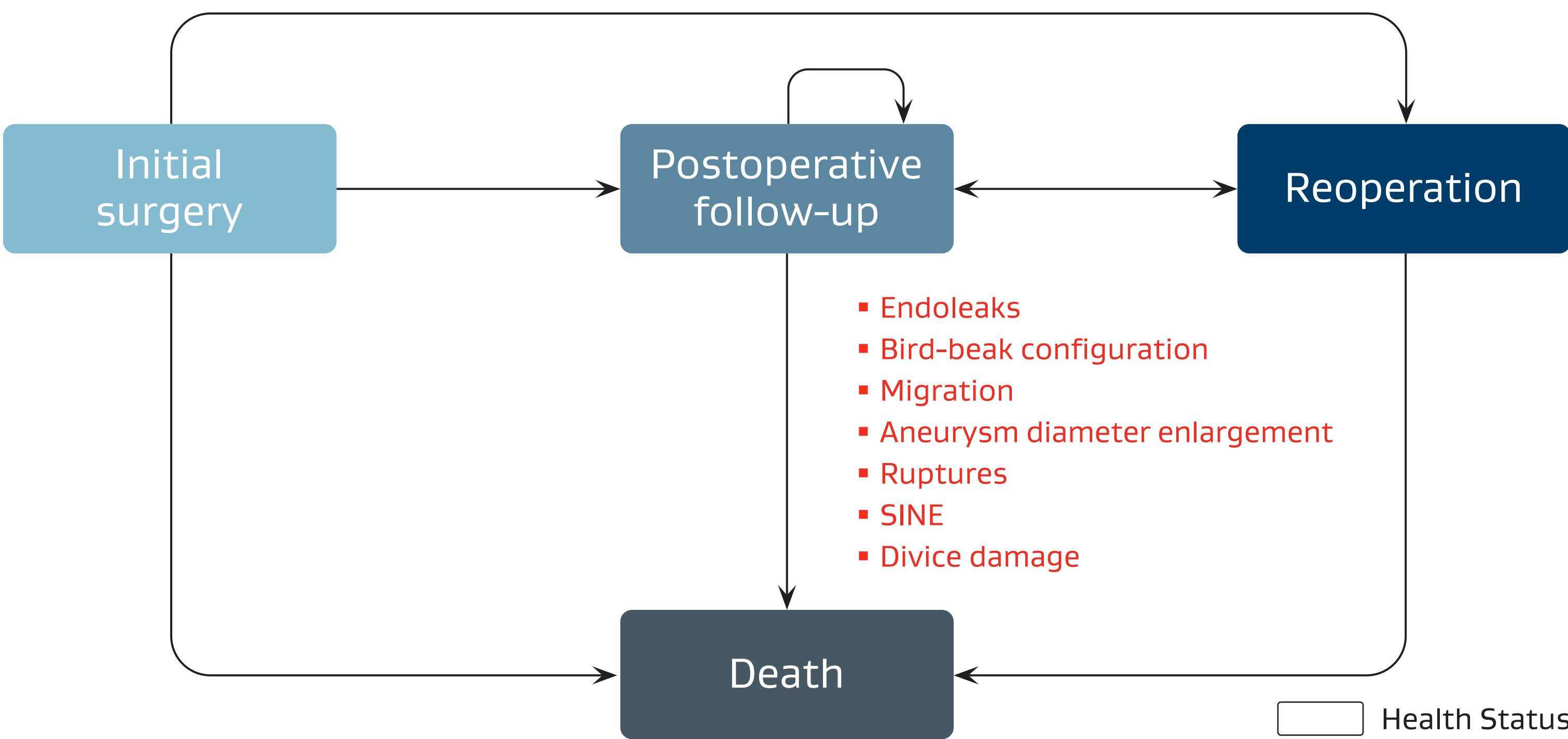
Thoracic endovascular aortic repair (TEVAR) devices have undergone continuous technological advancements. Recently, devices equipped with an active control (AC) mechanism—featuring a multi-stage deployment system that enables precise proximal positioning and minimizes the influence of blood flow during deployment—have been introduced. The clinical benefits of this technological innovation have been recognized by the Japanese Ministry of Health, Labor and Welfare, resulting in the assignment of a premium reimbursement price in 2023^a.

OBJECTIVES

This study aimed to evaluate the cost-effectiveness of TEVAR devices with active control (TEVAR-AC) compared to conventional TEVAR devices without active control (TEVAR-noAC), from the perspective of the Japanese public healthcare payer, in patients with thoracic aortic aneurysm (TAA) and Stanford type B aortic dissection (TBAD).

METHODS

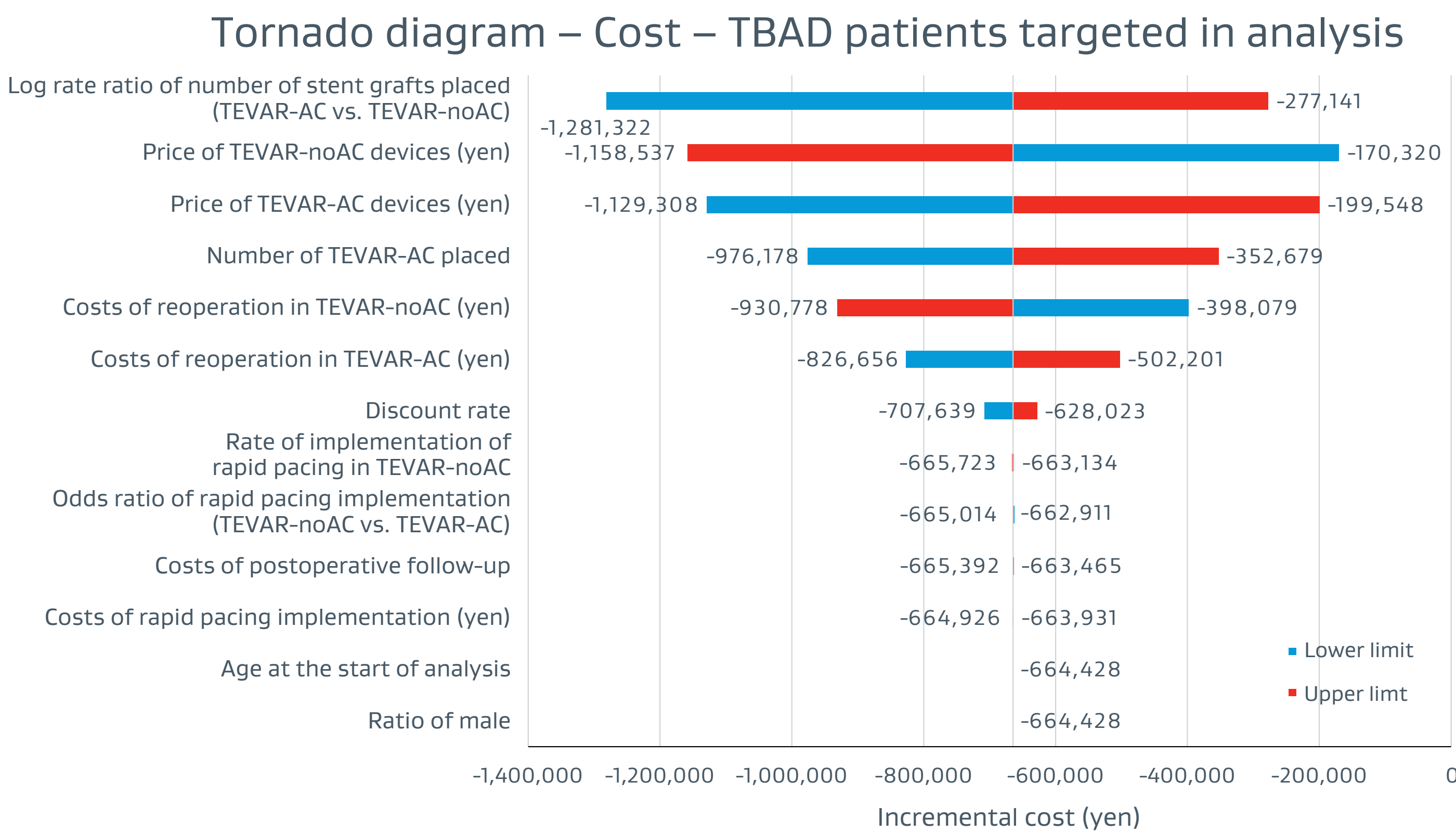
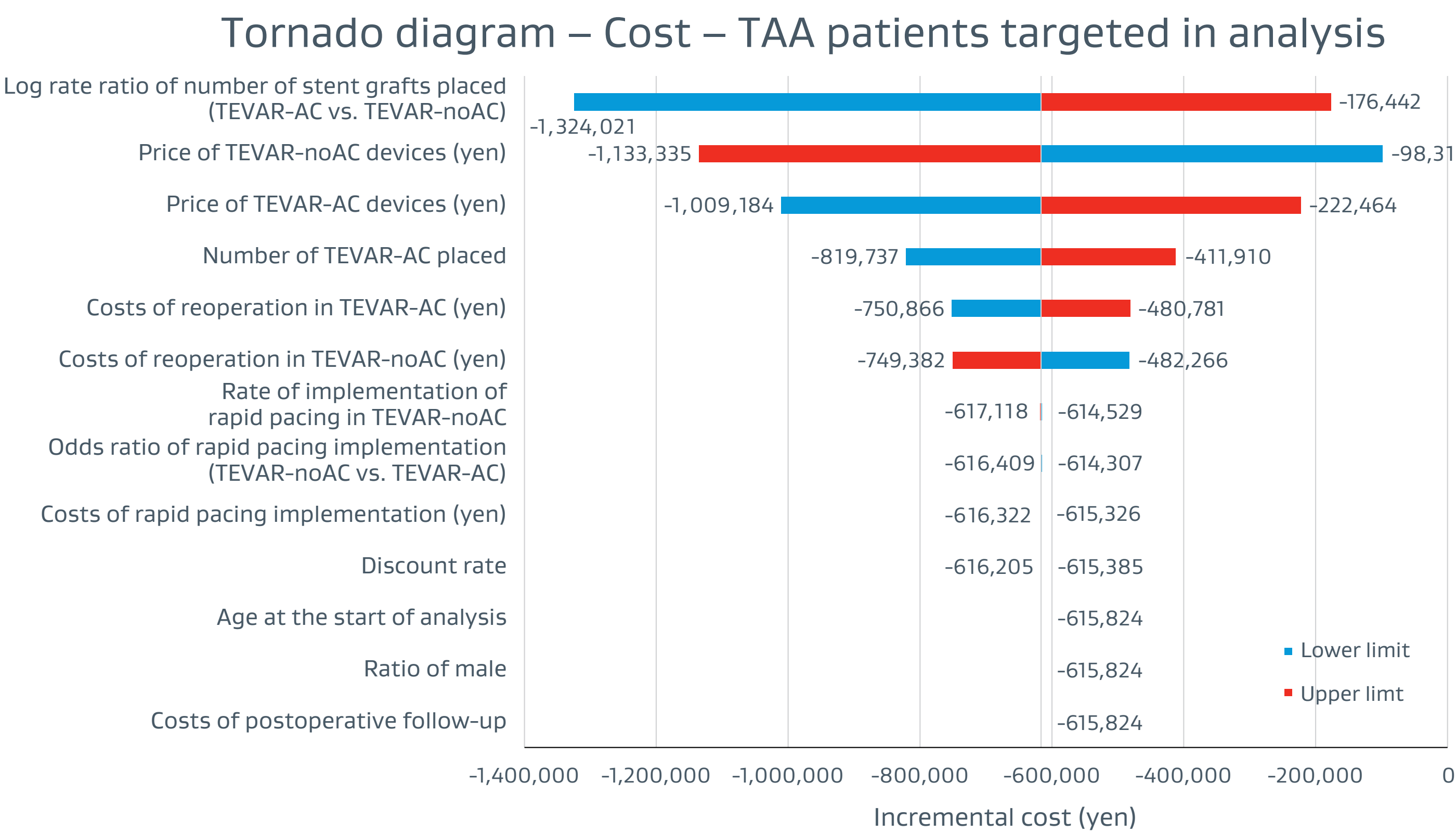
- An indirect comparison of TEVAR-AC and TEVAR-noAC was conducted using clinical outcomes derived from registry data^{b,c} and published literature^{d,f}.
- A lifetime Markov model with 1-year cycles was developed to assess cost-effectiveness from the perspective of the Japanese public healthcare payer (see image below).
- The analysis incorporated costs related to devices, procedures, follow-up, and reinterventions.
- Cost-effectiveness was evaluated using the incremental cost-effectiveness ratio (ICER), with a willingness-to-pay threshold set at JPY 5 million per quality-adjusted life year (QALY) gained.



RESULTS

The main factors contributing to these results were the lower incidence of reintervention and the small number of stent grafts used during the initial procedure.

	Total cost(yen)	Incremental cost (yen)	Effectiveness (QALY)	Incremental effectiveness (QALY)	ICER (yen/QALY)
TAA patients targeted in analysis					
TEVAR-AC	2,760,687	-736,030	5.153	0.003	Dominant
TEVAR-noAC	3,496,718	–	5.150	–	–
TBAD patients targeted in analysis					
TEVAR-AC	3,433,017	-664,428	6.364	0.013	Dominant
TEVAR-noAC	4,097,445	–	6.351	–	–



CONCLUSIONS

TEVAR-AC demonstrated to be dominant over TEVAR-noAC in the treatment of patients with TAA and TBAD, indicating a highly cost-effective therapeutic option that may contribute to healthcare cost savings.

REFERENCES

a. Ministry of Health, Labour and Welfare, Reimbursement of Medical Devices (Scheduled for Listing in September 2023), Chuikyo General–2–1, pp. 1, 7–11, PDF file, accessed September 4, 2025, <https://www.mhlw.go.jp/content/12404000/001117408.pdf>
b. Torsello GF, Argyriou A, Stavroulakis K, Bosiers MJ, Austermann M, Torsello GB; SURPASS Registry Collaborators. One-Year Results From the SURPASS Observational Registry of the CTAG Stent-Graft With the Active Control System. J Endovasc Ther. 2020 Jun;27(3):421–427.
c. Gable DR, Verhoeven E, Trimarchi S, Böckler D, Milner R, Dubenec S, Silveira P, Weaver F; GREAT Investigators. Endovascular treatment for thoracic aortic disease from the Global Registry for Endovascular Aortic Treatment. J Vasc Surg. 2024 May;79(5):1044–1056.e1.
d. Patterson B, Holt P, Nienaber C, Cambria R, Fairman R, Thompson M. Aortic pathology determines midterm outcome after endovascular repair of the thoracic aorta: report from the Medtronic Thoracic Endovascular Registry (MOTHER) database. Circulation. 2013;127(1):24–32. doi:10.1161/CIRCULATIONAHA.112.110056
f. Torsello GB, Torsello GF, Osada N, Teebken OE, Ratusinski CM, Nienaber CA. Midterm results from the TRAVIATA registry: treatment of thoracic aortic disease with the valiant stent graft. J Endovasc Ther. 2010;17(2):137–150. doi:10.1583/09-2905.1

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