Cost-Utility Analysis of Faricimab Versus Aflibercept in Treating Neovascular Age-Related Macular Degeneration (nAMD) in the United States

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Background and objective

Intravitreal anti-angiogenic medications have recently grabbed the attention of researchers to control the activity of neovascular wet age-related macular degeneration (nAMD) To evaluate the cost-utility of faricimab compared to aflibercept for treating neovascular age-related macular degeneration (nAMD) in the United States from a payer's perspective.

Methods

A Markov model simulated disease progression in patients with nAMD over a five-year horizon. Health states were defined by best-corrected visual acuity (BCVA) levels, using data from the TENAYA and LUCERNE Phase III clinical trials. Costs included drug acquisition, administration, office visits, and monitoring, sourced from Medicare reimbursement rates and literature. Utilities were derived from published time trade-off values corresponding to BCVA levels. The model calculated incremental cost-effectiveness ratios (ICERs) and net monetary benefits (NMBs). Deterministic and probabilistic sensitivity analyses assessed model robustness.

Reasults

Faricimab was the dominant strategy, with lower total costs ($49,388 vs. $56,798 for aflibercept) and higher effectiveness (3.39 vs. 3.29 quality-adjusted life years [QALYs]), resulting in an ICER of –$73,164 per QALY gained. Faricimab also demonstrated a higher NMB ($289,372 vs. $271,832). It required fewer injections over five years (18.08 vs. 27.33 for aflibercept). Sensitivity analyses confirmed faricimab's cost-effectiveness across various parameters, with acquisition costs and utility values being the most influential factors.

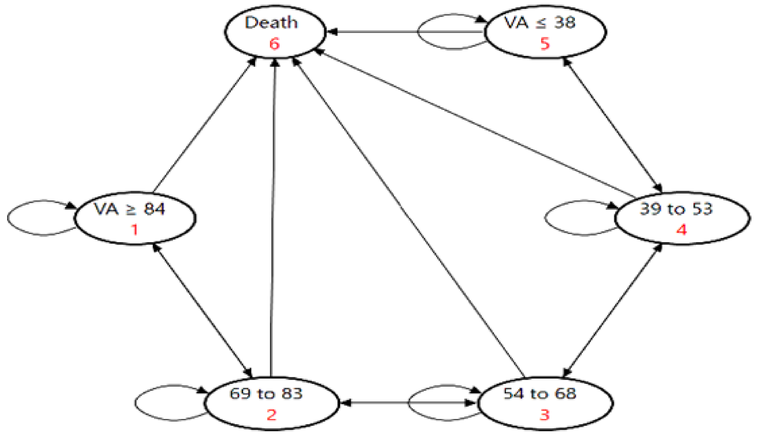

Figure 1. Markov model with the five states defined by visual acuity in the worse-seeing eye and an additional death state. Arrows indicate allowed transitions.

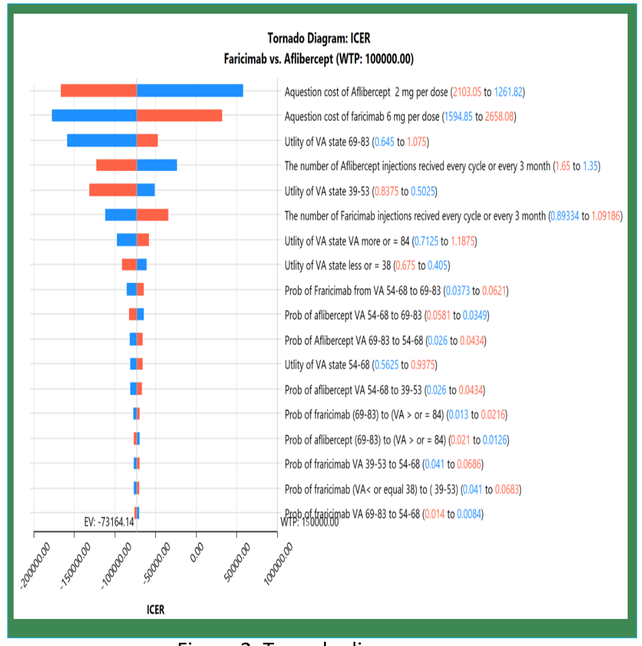

Figure 2. Tornado diagram.

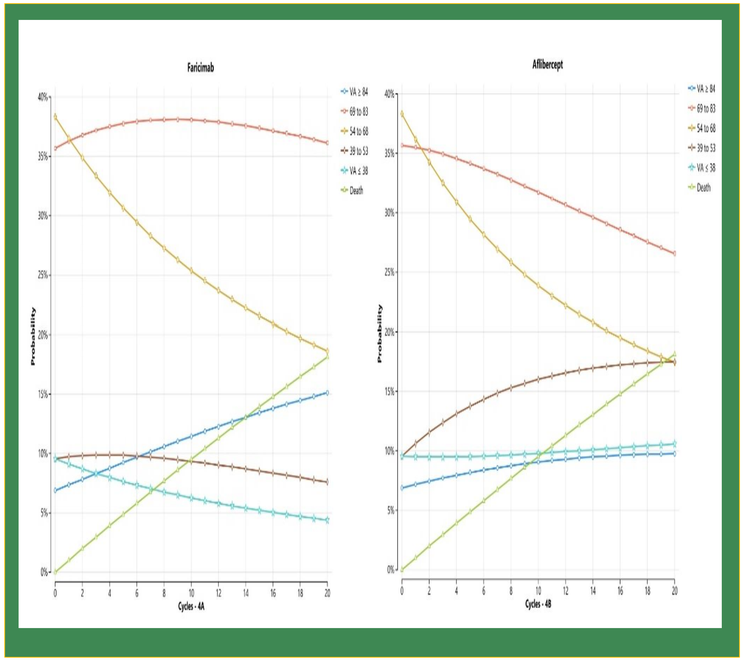

Figure 3A, 3B. Cohort probability over 20 cycles for Faricimab and Aflibercept

Conclusion

Faricimab offers superior economic value over aflibercept for nAMD treatment in the U.S., achieving comparable or improved clinical outcomes with fewer injections and lower costs. These findings support the adoption of faricimab as a cost-effective treatment option.

References

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