Cost-Effectiveness of Faricimab in Patients with Diabetic Macular Oedema in Canada

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Introduction

- Faricimab is a bispecific antibody targeting ANG-2 and VEGF for the treatment of diabetic macular oedema (DMO).
- In the YOSEMITE and RHINE trials (2-year long Phase III trials),[1] patients treated with faricimab in a Treat & Extend (T&E) regime required less frequent treatments compared to aflibercept given every eight weeks (Q8W) and achieved similar vision gains.
- Clinical practice in DMO in Canada is typically characterized by pro re nata (PRN) regimens as well as T&E.[2]
- This research aims to assess the cost-effectiveness of faricimab vs. anti-VEGF treatments applied in such regimens.

Methods

- A Markov cohort model based on the NICE guideline review[3] was developed in Excel to estimate bilateral visual acuity changes linked to quality of life, injection frequency and associated costs from a Canadian payer as well as a societal perspective.
- Transition probabilities and injection frequency were informed by the YOSEMITE and RHINE trials for faricimab and a network-meta analysis for comparators[4]. Deterministic and probabilistic sensitivity analyses were performed for costs and key model parameters.
- Time horizon was 25 years to reflect a life time horizon.
- Utility for visual acuity states was modelled using Czoski-Murrey et al. (2009)[5] including administration and adverse event related disutilites.
- Drug prices were based on publicly available list prices in Canada.

Results

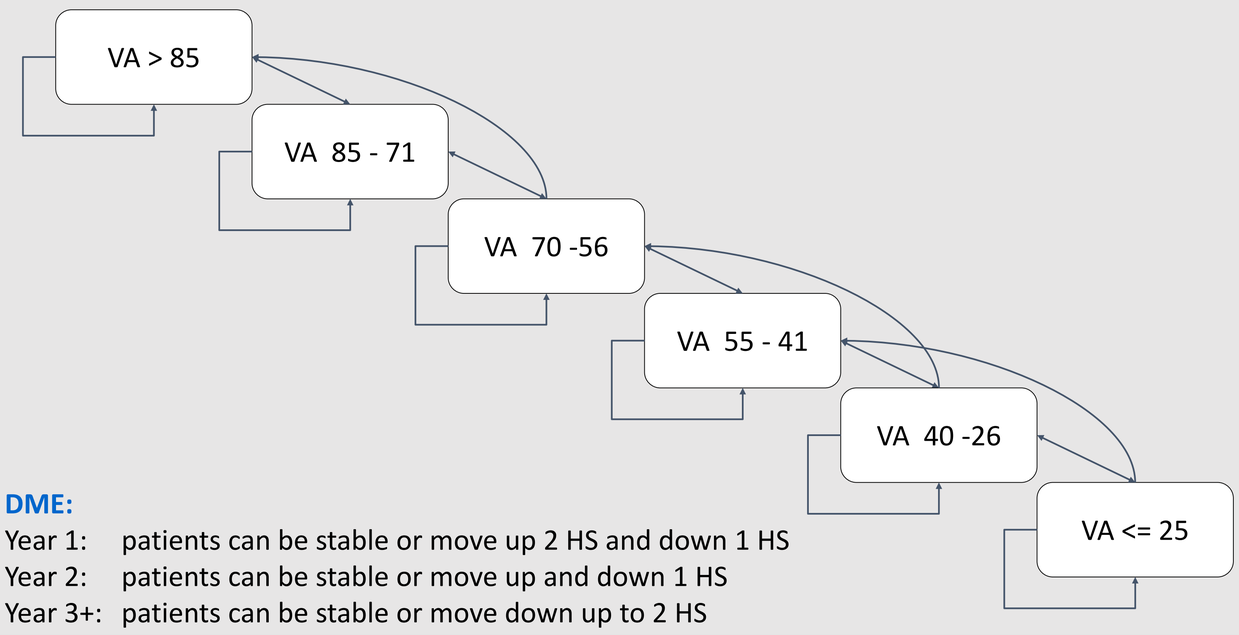
- The deterministic base case resulted in a mean QALY gain of 0.48, 0.21 and 0.53 vs. ranibizumab, aflibercept and bevacizumab respectively using PRN regimens and 0.55 vs. ranibizumab using a T&E regimen (data was only available for ranibizumab). QALY gains were mostly driven by improved quality of life due to better vision.
- From a payer perspective, faricimab generated lower costs vs. ranibizumab (PRN & T&E) and aflibercept of CAD 22,031, 20,600 and 8,480 as well as higher costs of CAD 31,019 vs. bevacizumab enabling patients to spend more than 1.5 additional years without visual impairment. Faricimab was also associated with a better durability profile than current treatment options.
- The ICER for the latter from a payer and societal perspective was 58,637 and 33,516. Sensitivity analyses were consistent with the base case.

Conclusions

- The results indicate that faricimab dominates ranibizumab and aflibercept administered in flexible regimens such as T&E and PRN that are normally used in clinical practice.
- Faricimab is associated with an ICER vs. bevacizumab that is within the typically accepted range especially from a societal perspective.
- Faricimab offers an innovative option enabling patients to retain their vision and independence for longer and contribute to society.
- The results also indicate, that societal costs such as informal care or costs of visual impairment represent a substantial economic burden and should be considered when evaluating novel therapeutic options.

1. Model Structure (Vision Related Health States)

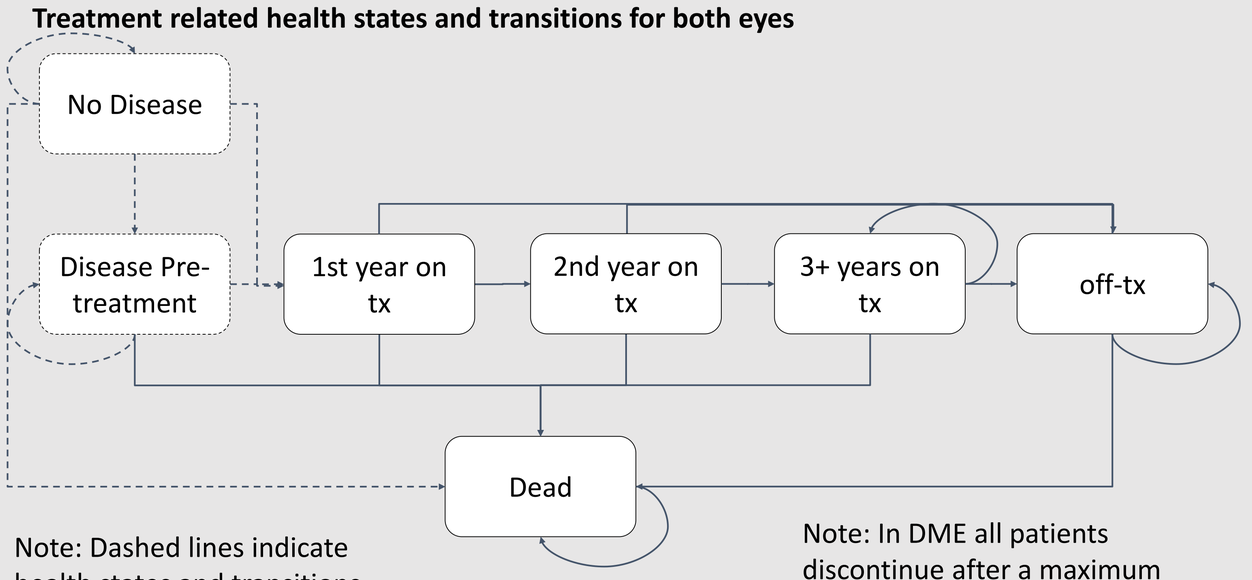
Visual acuity (VA) related health states and transitions for both eyes



DME:
Year 1: patients can be stable or move up 2 HS and down 1 HS
Year 2: patients can be stable or move up and down 1 HS
Year 3+: patients can be stable or move down up to 2 HS

2. Model Structure (Treatment Related Health States)

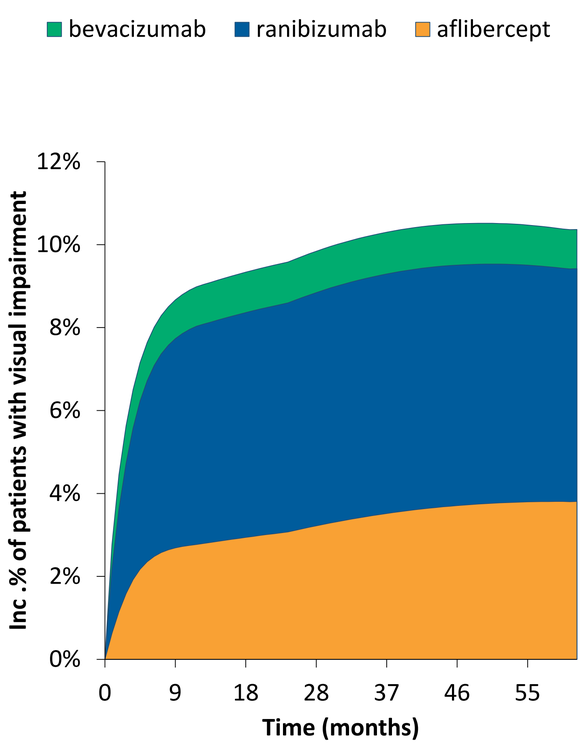
Treatment related health states and transitions for both eyes

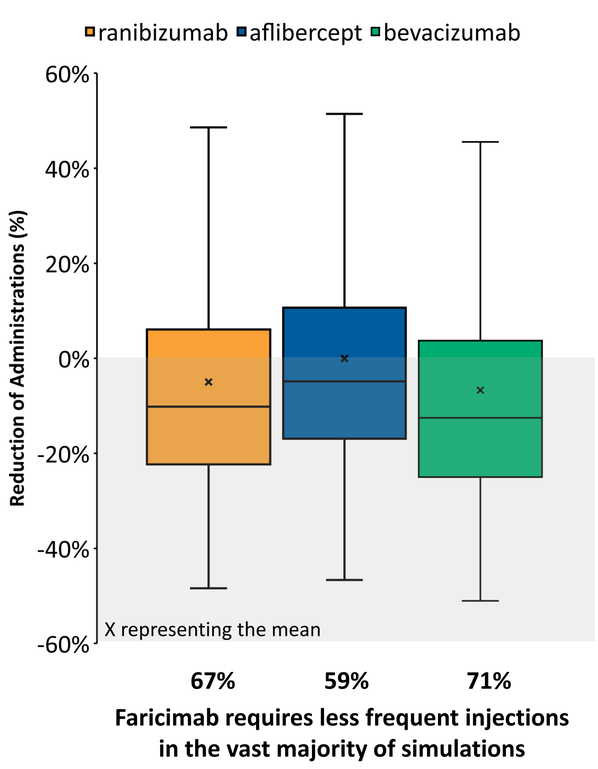


Note: Dashed lines indicate health states and transitions that only a fellow eye can experience

Note: In DME all patients discontinue after a maximum of 5 years since the disease is assumed to be resolved

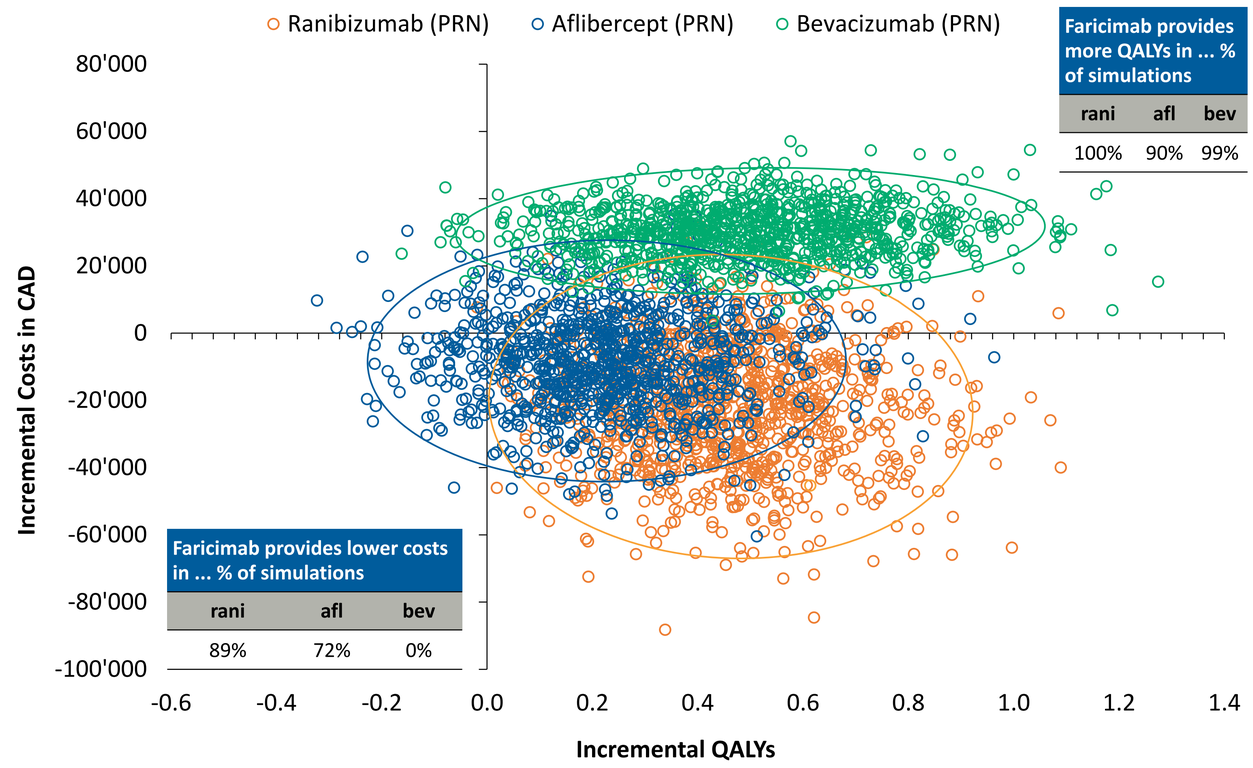
3. Reduction of Administrations and Visual Impairment of Faricimab vs. PRN Regimes



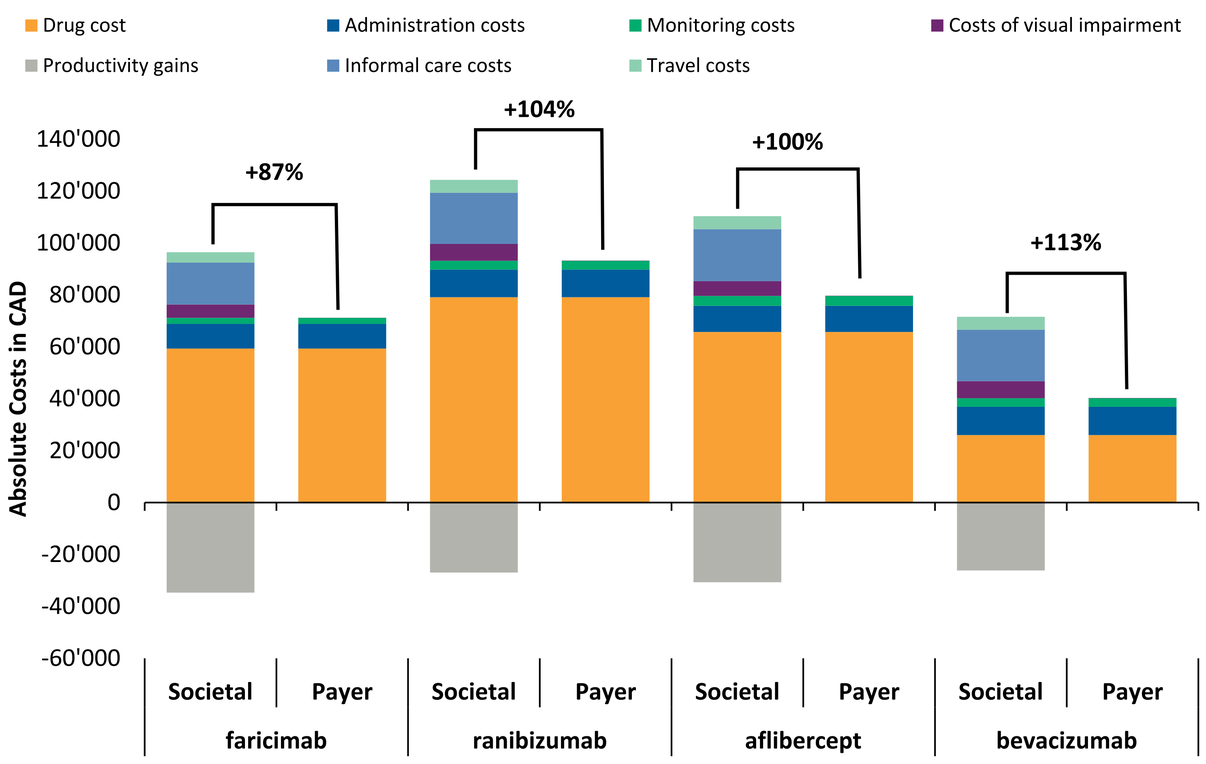


Faricimab requires less frequent injections in the vast majority of simulations

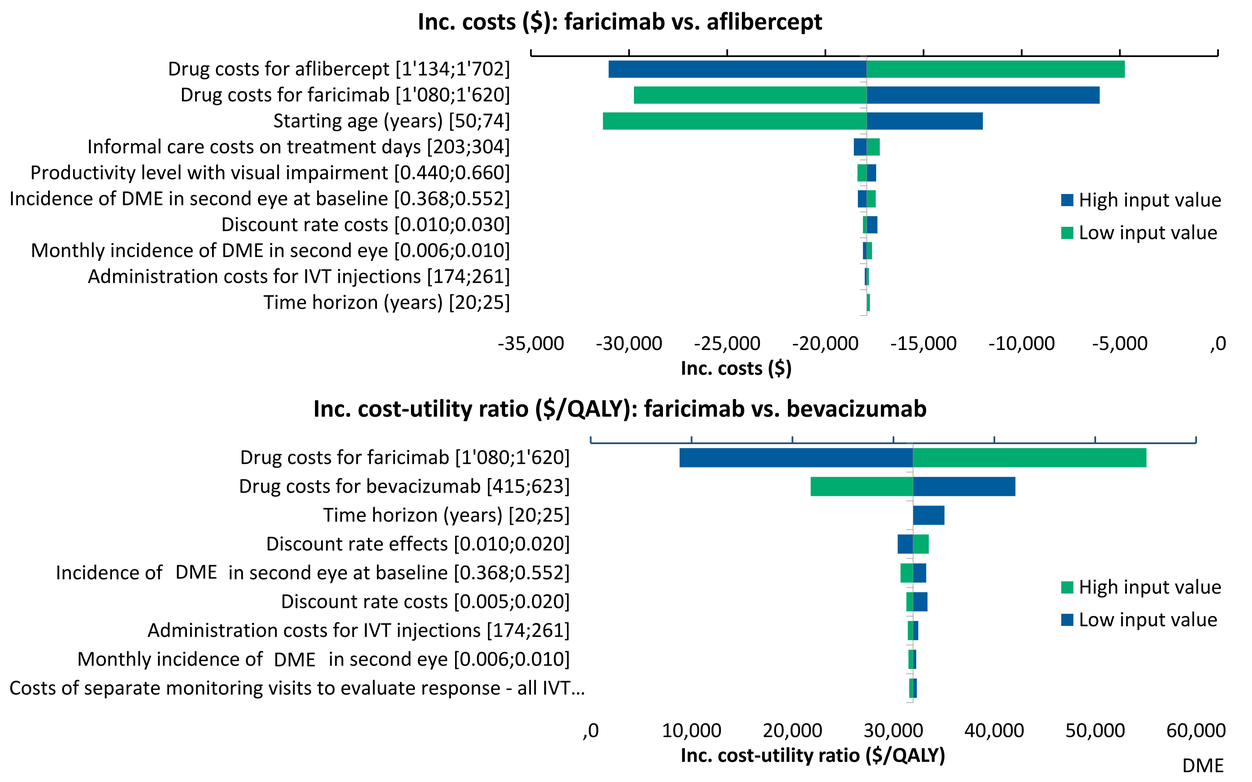
4. Incremental Cost-Effectiveness Plane for Faricimab vs. PRN Regimes – Payer Perspective



5. Breakdown of Deterministic Total Costs – Societal vs. Payer Perspective



6. Deterministic Sensitivity Analysis – Societal Perspective



References

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5. Czoski-Murray et al.; Valuing condition-specific health states using simulation contact lenses. Value Health. 2009 Jul-Aug;12(5):793-9. DOI: 10.1111/j.1524-4733.2009.00527.x.

Financial Disclosures

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