

# EFFICACY AND SAFETY OF ANTI-VEGF DRUGS FOR NEOVASCULAR AGE-RELATED MACULAR DEGENERATION THERAPY: SYSTEMATIC REVIEW AND META-ANALYSIS

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## INTRODUCTION

- Neovascular age-related macular degeneration (nAMD) is a prognostically unfavorable form of disease, associated with neovascularization and often leads to vision loss and disability.
- First line of nAMD treatment is intravitreal injections of anti-vascular endothelial growth factors (anti-VEGF) drugs.
- A novel bispecific monoclonal antibody targeting simultaneously VEGF-A and angiopoietin-2 pathways is faricimab.

## OBJECTIVES

- To perform an indirect comparison of the efficacy and safety of faricimab and other anti-VEGF drugs for nAMD.

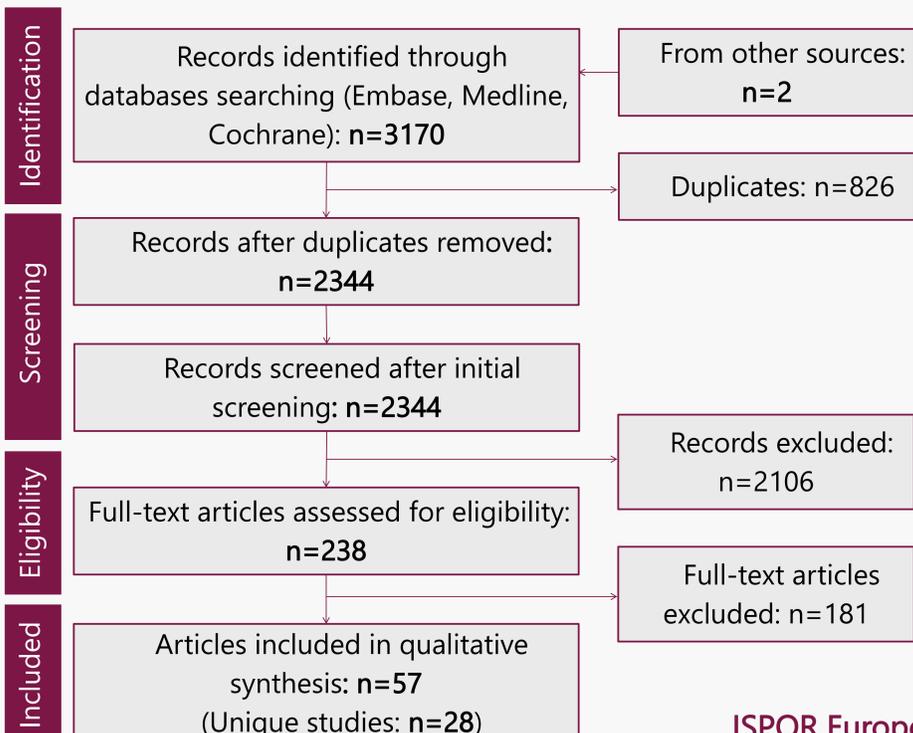
## METHODS

- We conducted a systematic review via PRISMA guideline among randomized controlled trials (RCTs) published until Nov 2022
- For the network meta-analysis (NMAs) we selected RCTs with data on 4 efficacy and 2 safety outcomes for 1 year of therapy:
  - 1) change from the baseline in best-corrected visual acuity (BCVA),
  - 2) change from the baseline in central retinal thickness (CRT),
  - 3) mean number of injections,
  - 4) letter category (patients gaining  $\geq 15$  ETDRS letters visual acuity),
  - 5) incidence of ocular adverse events (AEs),
  - 6) treatment discontinuation.
- Additionally we accessed 2 outcomes after 24 months of therapy: changes from baseline in BCVA and injection frequency
- NMAs accessed faricimab 6 mg up to one injection in 16 weeks (Q8-16W) vs aflibercept 2 mg and ranibizumab 0.5 mg in fixed (Q4W, Q8W), pro re nata (PRN, PRN+loading, PRN + extension), treat-and-extend (TREX) regimens and sham/placebo IVIs.
- Calculations were obtained using RStudio software. Fixed effect models were consistent for BCVA, CRT and ETDRS letters outcomes. Random effect models were selected for injection frequency, ocular AEs incidence and treatment discontinuation

## RESULTS

Of the 3172 initial publications, we assessed 238 publications for eligibility and considered 28 studies for inclusion in the NMA (Fig.1)

Figure 1. PRISMA flow chart



## RESULTS

- The core network was formed from 19 RCTs: ANCHOR, ARIES, CANTREAT, CATT, HARBOR, In-Eye, LUCERNE, MARINA, Mori 2017, PIER, RABIMO, RIVAL, SALUTE, STAIRWAY, TENAYA, TREND, TREX-AMD, VIEW 1, VIEW 2.
- Faricimab 6 mg Q8-16W is associated with comparable or even superior visual (BCVA change) and anatomical (CRT reduction) outcomes per year of therapy with a lower injection frequency than aflibercept 2 mg or ranibizumab 0.5 mg in various regimens (Fig 2-7).

Figure 2. Mean change in BCVA from the baseline after 12 months of therapy

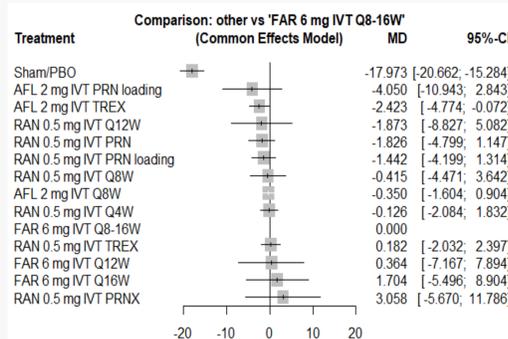


Figure 4. Proportion of patients gaining  $\geq 15$  ETDRS letters after 12 months of therapy

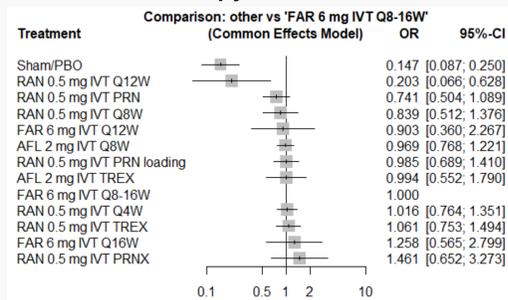
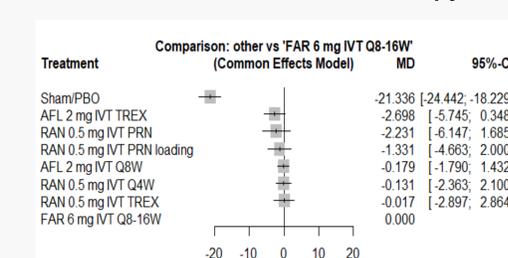


Figure 6. Mean change in BCVA from baseline after 24 months of therapy



- Faricimab has similar to other angiogenesis inhibitors safety profile for nAMD patients (Fig. 8-9).

Figure 8. Ocular AEs probability per 1 year of therapy

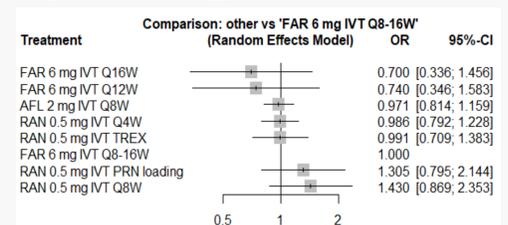


Figure 3. Mean change in CRT from the baseline after 12 months of therapy

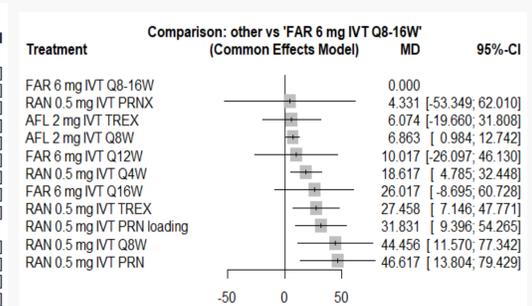


Figure 5. Mean number of injections per 12 months

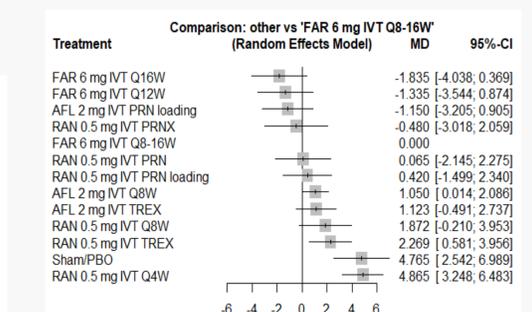
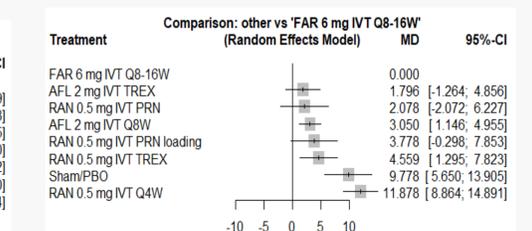


Figure 7. Mean number of injections per 2 years



## CONCLUSIONS

- Clinical efficacy and safety of faricimab and other anti-VEGF drugs are comparable in patients with nAMD.