A SCOPING REVIEW OF REAL-WORLD EVIDENCE OUTCOMES FOR BEVACIZUMAB IN AGE-RELATED MACULAR DEGENERATION

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BACKGROUND

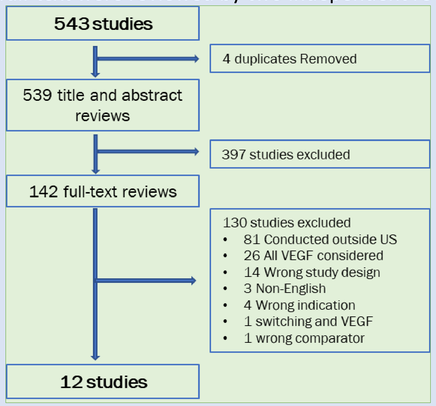
- Age related Macular Degeneration (ArMD) is a leading cause of irreversible vision loss.
- ArMD prevalence has increased over the last several decades.
- Pharmacological treatments include anti-vascular endothelial growth factor (anti-VEGF).
- Bevacizumab, a monoclonal antibody against VEGF used in metastatic colorectal and breast cancer, has also been used off-label for ArMD. In the last years 2 biosimilars of bevacizumab have been approved.

AIM

- To identify and describe current descriptive and observational literature regarding real-world evidence and associated outcomes with the use of bevacizumab or its biosimilars in ArMD.

METHODS

- Scoping review according to the PRISMA-ScR framework.
- Peer-reviewed observational (retrospective or prospective) studies of adults (18 years of age or older) who received bevacizumab for ArMD, conducted in U.S., published in English after September 2017, that that used primary or secondary data to quantitatively analyze clinical and patient-reported outcomes were considered.
- The search was conducted in April 2021 in Medline (Ovid), CINAHL (Ebsco), and Embase (embase.com) databases by experts in data extraction.
- Title, abstract, and full-text were reviewed by two independent reviewers



RESULTS

Author (PMID)	Comparator(s)[a]	Design	Time period	Data Sources and N	Outcome(s)[b]
Adrean et al. 2018 (29439828)	beva, rani, or aflib	Case series	2005-2017	Private retina practice (N = 71 eyes)	VA (ETDRS), II frequency, Lines gain/losses
Kiss et al. 2020 (32345477)	beva, rani, or aflib	Cohort	2009-2016	USRetina (N = 37,021 eyes)	II count, OCT, VA (ETDRS), CRT and ophthalmologist visit count
Parikh el al. 2017 (27890437)	beva, rani, or aflib	Case series	2006-2015	OptumLabs Data Warehouse (N = 124,835 patients)	Eye condition(s), patient characteristics, anti VEGF ocular condition
Soares et al. 2020 (31540854)	beva, rani, or aflib	Cross-sectional	2014-2016	Mid Atlantic Retina and Wills Eye Hospital (N = 93 eyes)	VA, OCT, Central foveal thickness, II count, change in vision
Hwang et al. 2020 (30649077)	beva	Case series	2012-2014	Private practice site (N = 49 eyes)	VA (LogMAR)
Ciulla et al. 2020 (31324588)	beva, rani, or aflib	Case series	2012-2016	VestrumHealth LLC (N = 49,485 eyes)	II count, and VA (log(Snellen fraction))
Maloney et al. 2021 (32781110)	beva, rani, or aflib	Cohort	2007-2018	OptumLabs Data Warehouse (N = 31,677 patients)	MI, CVD, major bleeding, morbidity
Rao et al. 2018 (29146306)	beva, rani, or aflib	Cohort	2013-2016	AAO IRIS Registry (N = 13,859 patients)	Best corrected VA (LogMAR)
Kiss et al. 2018 (30214147)	beva, rani, or aflib	Cohort	2011-2013	Wolters Kluwer Health's Source® Lx database (N = 156,594 patients)	Endophthalmitis
Atchison et al. 2018 (29336897)	beva, rani, or aflib	Cohort	2013-2015	AAO IRIS Registry (N = 17,394 patients)	Mean change in IOP after 1 year, and the proportion of clinically significant IOP increase[c]
Lee et al. 2020 (32864064)	beva, rani, or aflib	Cross-sectional	2008-2015	Northwestern Medicine Enterprise Data Warehouse (N = 224 eyes)	VZ, II frequency, and OCT (TAE model)
Eng et al. 2020 (32369500)	beva, rani, or aflib	Case series	2006-2019	Byers Eye Institute (N = 197 eyes)	cRORA prevalence, location, size, and growth rate

[a]aflib = aflibercept, beva = bevacizumab, rani = ranibizumab; [b] cRORA = complete retinal and outer retina atrophy, CRT = central retinal thickness, CVD = acute cerebrovascular disease, ETDRS = Early Treatment Diabetic Retinopathy Study, II = intravitreal injections, IOP = intraocular pressure, LogMAR = Logarithm of the Minimum Angle of Resolution, MI = myocardial infarction, OCT = optical coherence tomography, VA = visual acuity; [c] defined as sustained rise of at least 6 mmHg to an IOP of more than 21 mmHg

CONCLUSIONS

- **Visual acuity** and the **number of intravitreal injections** were the **most common outcomes**.
- Most of the current larger studies come from databases with limited clinical information.
- While these early studies are promising, more real-world studies of long-term efficacy and safety outcomes are needed.
- Opportunities for smaller practice sites to partner with experienced researchers will greatly enhance future outcome(s) generalizability
- No comparative studies of bevacizumab to its biosimilars (MvasiTM, ZirabevTM) for ArMD were identified.

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