

# Long-Term Real-World Treatment Patterns Among Patients With Diabetic Macular Edema Initiating Anti-VEGF: 6-Year Follow-Up Using the IRIS® Registry

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# Background and Purpose

- Background

- Anti-VEGF intravitreal therapies are the first-line treatment for DME<sup>1</sup>
- Patients who exhibit poor responses are switched to new anti-VEGF agents<sup>2-3</sup>
- Many patients with DME discontinue anti-VEGF treatment or do not follow-up treatment appropriately
- The long-term switching and treatment discontinuation of anti-VEGF agents in routine clinical practice remains unclear<sup>4</sup>

- Purpose

- This study aimed to characterize long-term treatment patterns among patients with DME from a large ophthalmology registry

<sup>1</sup> Kim EJ et al. *Curr Diab Rep.* 2019;19(9):68. <sup>2</sup> Banaee T et al. *Ophthalmic Surg Lasers Imaging Retina.* 2017;48(9):748-754. <sup>3</sup> Garmo V et al. *Invest Ophthalmol Vis Sci.* 2021;62(8):1060. <sup>4</sup> Virgili G et al. *Cochrane Database Syst Rev.* 2018;10(10):CD007419. DME, diabetic macular edema; VEGF, vascular endothelial growth factor.

# Methods

- A retrospective analysis was conducted among treatment-naïve patients in the United States with DME (no prior anti-VEGF IVT in the past 12 months) initiating IVT from 1/1/2015–12/31/2019 (index date) using deidentified electronic medical records (IRIS® Registry)
- Analyzed anti-VEGF agent utilization patterns, including agent type, switches (defined as  $\geq 3$  consecutive injections of a different anti-VEGF agent from the original agent), and discontinuations (defined as no anti-VEGF IVT for  $\geq 12$  months)
- Results were stratified by baseline best visual acuity and initial anti-VEGF agent, including on-label (ranibizumab and aflibercept) and off-label (bevacizumab) agents

# Cohort Attrition

**All eyes with anti-VEGF injections in index period, with no anti-VEGF injections 12 months pre index**

n = 1,980,600 (100.0%)



**No IVT steroid use in 12-month pre index**

n = 1,970,342 (99.5%)



**≥ 12 months of data pre index**

n = 1,034,639 (52.2%)



**Documentation of DME within 2 months pre index**

n = 208,834 (10.5%)



**Age ≥ 18 years and known sex at index date**

n = 207,411 (10.5%)



**Record of ≥ 1 BVA recording at or within 60 days pre index**

n = 190,345 (9.6%)

# Baseline Clinical Characteristics

Baseline Clinical Characteristics (by Patient Eyes)	Patient Eyes <sup>a</sup>
<b>Total number of eyes</b>	190,345 (100.0%)
<b>Diabetic retinopathy</b>	
PDR	86,573 (45.5%)
NPDR	95,260 (50.0%)
Unknown	8,512 (4.5%)
<b>Glaucoma</b>	36,807 (19.3%)
<b>Cataract</b>	104,869 (55.1%)
<b>Patients with bilateral disease<sup>a</sup></b>	42,658 (28.9%)

Data shown as n (%). <sup>a</sup>By number of patients.

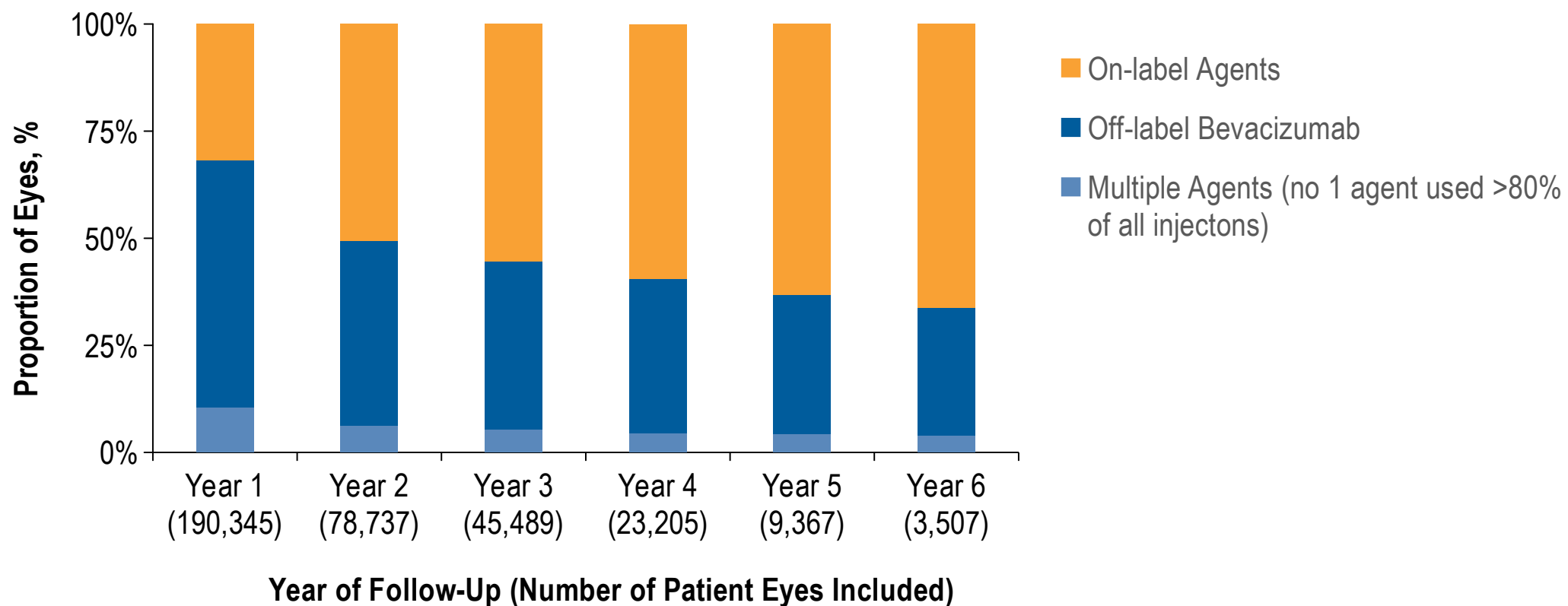
NPDR, nonproliferative diabetic retinopathy; PDR, proliferative diabetic retinopathy.

# Anti-VEGF Use During Follow-up (Full Cohort)

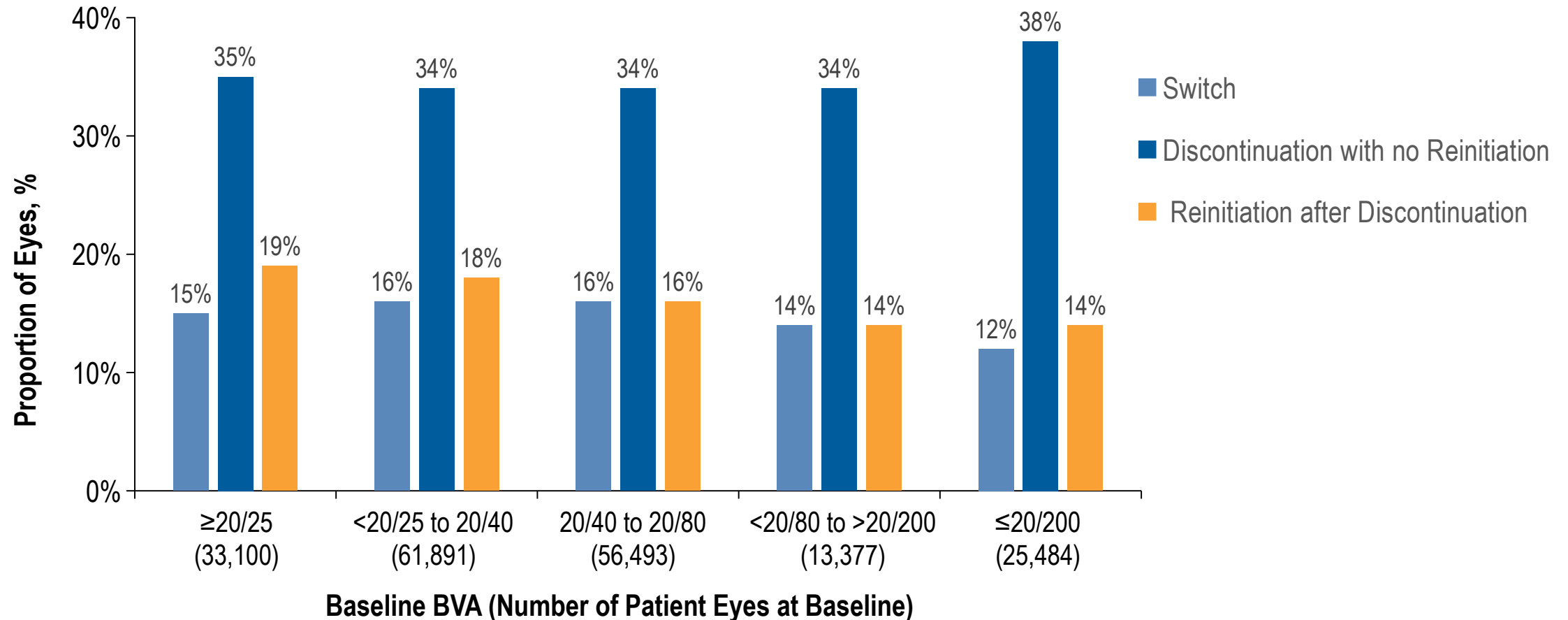
	Patient Eyes <sup>a</sup>
<b>Total number of eyes</b>	190,345 (100.0%)
<b>Number of anti-VEGF agents<sup>b</sup></b>	
1 agent	147,336 (77.4%)
2 agents	39,669 (20.8%)
≥ 3 agents	3340 (1.8%)

Data shown as n (%). <sup>a</sup>By number of patients. <sup>b</sup>Includes branded and off-label agents.  
VEGF, vascular endothelial growth factor.

# Anti-VEGF Agent Use in Each Year of Follow-up



# Anti-VEGF Switching and Discontinuation by Baseline BVA





# Conclusions

- Over the 6-year follow-up, approximately one-third of patients discontinued anti-VEGF intravitreal therapy in any given year
- 58% of patients initially received bevacizumab, but its use decreased over time, with an increased use of on-label agents
- Reasons for switching and discontinuation should be further explored