Profiles of Patients Who Initiated Brolucizumab for Neovascular (Wet) Age-related Macular Degeneration (AMD) in the IRIS® Registry

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Retina Society Annual Meeting, 2020

Disclosures

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- Alimera Sciences, Inc.: (C, G); Allergan, Inc.: (C); Apellis: (G); Clearside Biomedical: (C); Covalent Medical: (EO); GENENTECH: (C); National Eye Institute: (G); Novartis Pharma AG: (C); Regeneron: (C); Spark Therapeutics: (C); US Retina: (EO)

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- Bausch and Lomb: (C); Cleveland Clinic: (E); Genentech: (C); Novartis Pharmaceuticals Corporation: (C); Regeneron: (C); Zeiss: (C); Apellis: (R); Graybug: (R)

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- Adverum: (C, R); Aerpio: (C, R); Alimera Sciences: (C); Allegro: (C); Allergan: (C, R); Alnylam: (C); Apellis: (C, R); Bayer: (C); Clearside: Biomedical: (C, R); DORC: (C); EyePoint: (C, R); Genentech/Roche: (C, R); Kodiak: (C); Neurotech: (R); Notal Vision: (C); Novartis: (C, R); ONL Therapeutics: (C); Opthea: (R); PolyPhotonix: (C); Recens Medical: (C); Regeneron: (C, R, S); Regenxbio: (C, R); Samsung: (R); Santen: (C, R); Takeda: (C)

Funding Source: Novartis Pharmaceuticals Corporation

Acknowledgement: The authors thank Write All, Inc.

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C, Consultant/Advisor; E, Employee; EO, Equity Owner; G, Grant Support; R, Research.

Summary

- The majority of wet AMD patients initiating brolucizumab switched from a prior anti-VEGF agent, most commonly aflibercept
- Unmet needs continue to exist for many wet AMD patients, as demonstrated by switching to brolucizumab
- Future research will focus on patients with longer follow-up to assess brolucizumab effectiveness, safety, and treatment patterns

AMD, age-related macular degeneration; VEGF, vascular endothelial growth factor.

Background

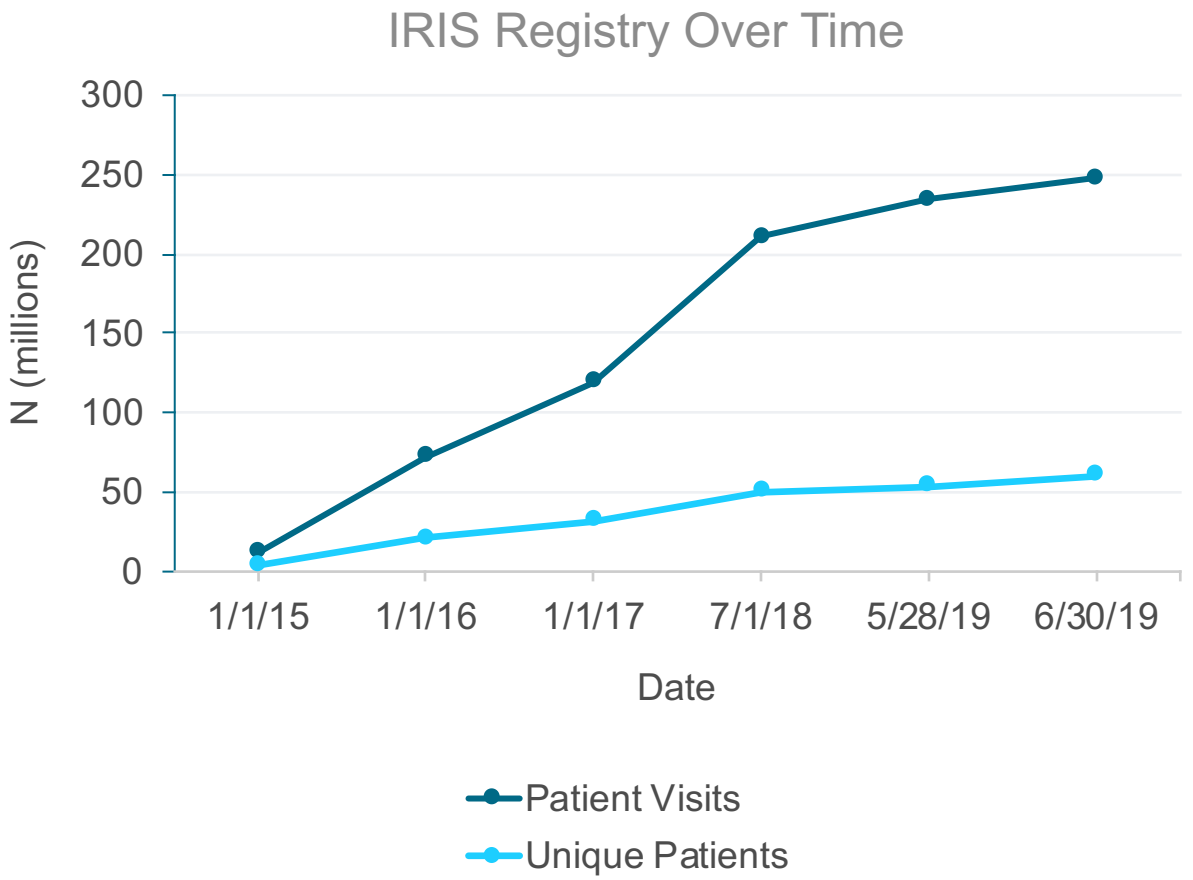
- Brolucizumab (BEOVU®) was approved by the US FDA in October 2019 for the treatment of wet AMD
- Limited evidence exists on real-world patient characteristics, outcomes, and treatment patterns of patients with wet AMD who initiated brolucizumab
- This study adds to the understanding of brolucizumab patients in clinical practice, with a focus on how they were treated prior to initiating brolucizumab

AMD, age-related macular degeneration; FDA, Food and Drug Administration; US, United States

American Academy of Ophthalmology IRIS® Registry (Intelligent Research In Sight)

OVERVIEW

- First US-based national comprehensive eye disease database based on electronic health records (EHR)[1]
- Contracted **15,151** physicians from **3,085** practices for EHR integration as of July 1, 2019[2]
- 248 million patient visits, representing 60 million patients[2]
- 1,705,936 unique patients who received ≥1 anti-VEGF injection[3]
    - 48% with a diagnosis of wet AMD before or on the day of the first injection



AMD, age-related macular degeneration; EHR, electronic health records; US, United States; VEGF, vascular endothelial growth factor.

1. Rao P, et al. *Ophthalmology.* 2018;125:522-528.
2. Data on file. IRIS Registry. Verana Health, San Francisco, CA, USA. August 2019.
3. Data on file. IRIS Registry. Verana Health, San Francisco, CA, USA. April 2019.

IRIS Registry Study: Overview

AIM: To assess real-world baseline demographic and clinical characteristics, prior treatment patterns, and early treatment patterns of patients with wet AMD who initiated brolucizumab

METHODS

Inclusion Criteria

- Patients with ≥1 brolucizumab J code or EHR text between Oct. 8, 2019 – Mar. 31, 2020 (date of earliest injection = index date)
- Patients with ≥18 years old on the index date
- Patients with a diagnosis of wet AMD anytime between Jan. 1, 2013 and the index date

Exclusion Criteria

- Patients who were treated with brolucizumab in a clinical trial
- Patients without information on the specific eye(s) treated with brolucizumab on the index date

Key Outcomes

- Baseline demographic and clinical characteristics (patient level, patient-eye level)
- Prior anti-VEGF treatment (patient-eye level)

AMD, age-related macular degeneration; EHR, electronic health record; Jan., January; Mar., March; Oct., October; VEGF, vascular endothelial growth factor.

Baseline Characteristics: Patient Level

	Brolucizumab (n=9,457)
Age (years), mean (SD)	80.5 (8.5)
Gender, Female, n (%)	58.0
Race, White, n (%)	84.2
Region, n (%)*	
Midwest	2,685 (28.4)
Northeast	1,323 (14.0)
South	2,946 (31.2)
West	2,364 (25.0)
Unknown	161 (1.7)

	Brolucizumab (n=9,457)
Insurance Type, n (%)	
Commercial	350 (3.7)
Medicare	6,394 (67.6)
Medicare Advantage	668 (7.1)
Other	409 (4.3)
Unknown	1,636 (17.3)
Treatment Status with Brolucizumab, n (%)	
Unilateral	8,320 (88.0)
Bilateral	1,137 (12.0)

SD, standard deviation.
*Based on encounter location. Some patients saw a provider in more than one region and are thus counted in >1 region.

Baseline Characteristics: Eye Level

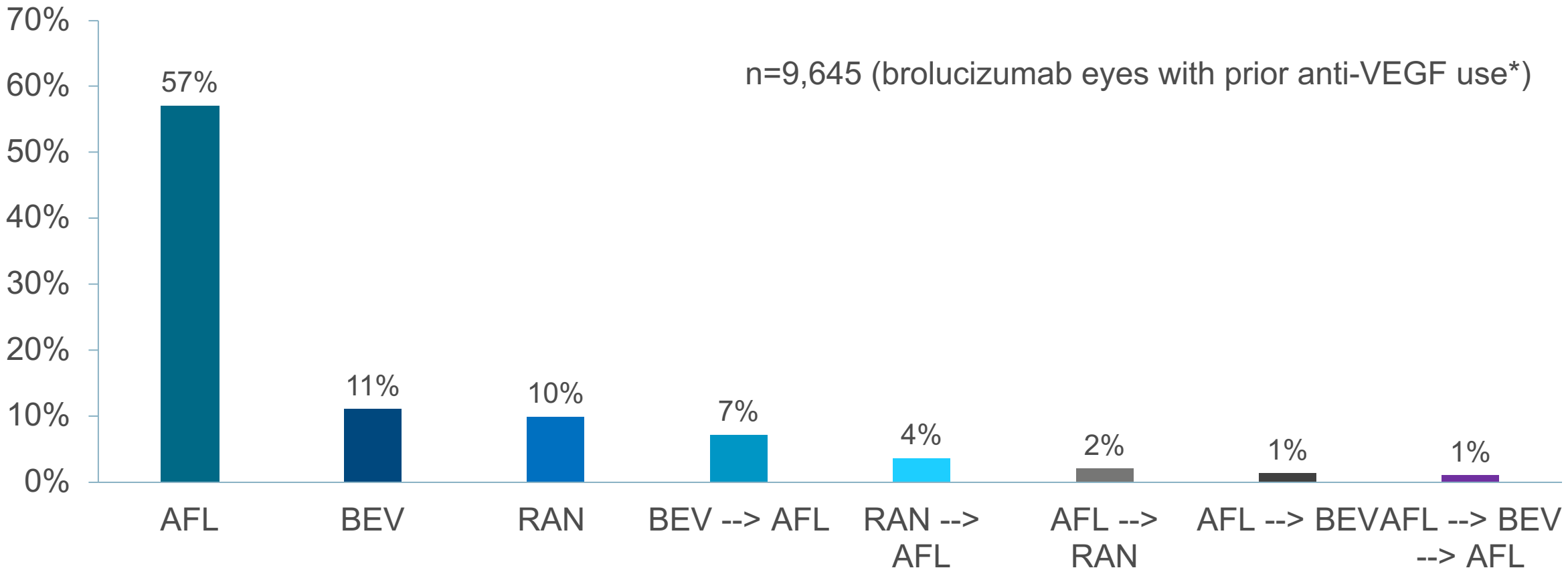
	Brolucizumab (n=10,594)
Non-missing VA, n (%)	7,459 (70.4)
VA, n (%)*	
20/12 – 20/20	414 (5.6)
20/25 – 20/40	3,119 (41.8)
20/50 – 20/160	3,059 (41.0)
20/200 or worse	867 (11.6)
Anti-VEGF Naïve,† n (%)	949 (9.0)
Prior Anti-VEGF Use,† n (%)	9,645 (91.0)

	Brolucizumab (n=10,594)
Ocular Comorbidities, n (%)‡	
Amblyopia	34 (0.3)
Cataract	3,755 (35.4)
Diabetic macular edema	79 (0.8)
Diabetic retinopathy	309 (2.9)
Epiretinal membrane	1,517 (14.3)
Glaucoma	1,903 (18.0)
Macular hole	175 (1.7)
Myopic CNV	49 (0.5)
PVD	297 (2.8)
Pseudophakia	4,720 (44.6)
Retinal vein occlusion	215 (2.0)
Vitreomacular traction	119 (1.1)

*Among eyes with a non-missing VA measurement; †Based on the 12 months prior to the index date; ‡A patient eye may have more than one clinical comorbidity

CNV, choroidal neovascularization; PVD, posterior vitreous detachment; VA, visual acuity; VEGF, vascular endothelial growth factor.

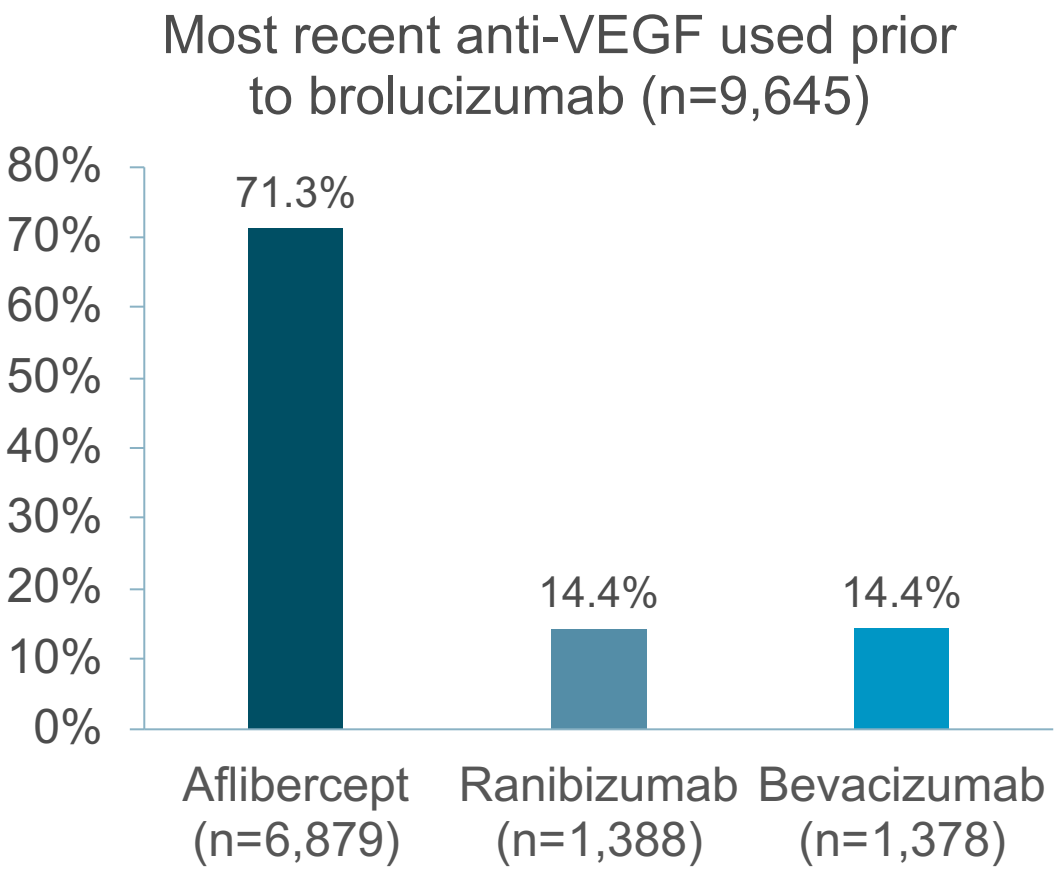
Anti-VEGF Treatment Sequence in the Prior 12 Months

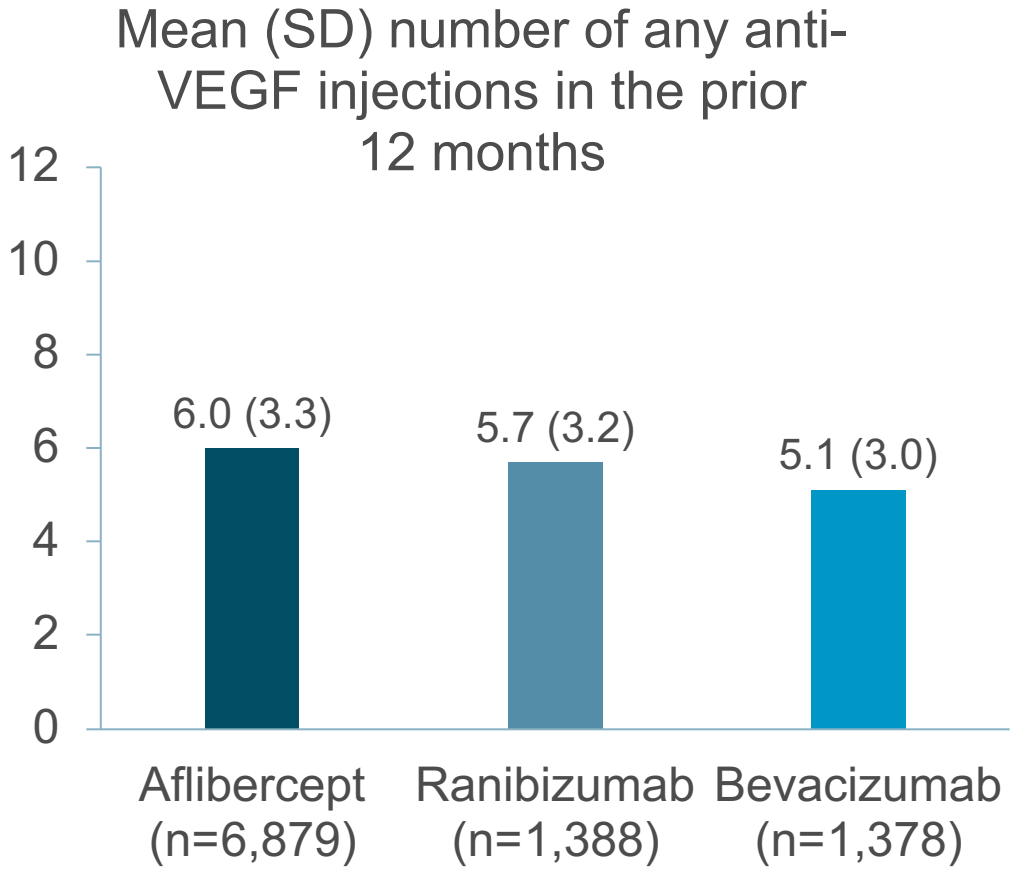


Majority of brolucizumab patient eyes were treated only with aflibercept in the prior 12 mo

*In the 12 months prior to brolucizumab treatment
AFL, aflibercept; BEV, bevacizumab; mo, months; RAN, ranibizumab; SD, standard deviation; VEGF, vascular endothelial growth factor.

Mean Number of Anti-VEGF Injections in the Prior 12 Months





Majority of brolucizumab patient eyes previously received 5-6 injections per year

*In the 12 months prior to brolucizumab treatment
AFL, aflibercept; BEV, bevacizumab; mo, months; RAN, ranibizumab; SD, standard deviation; VEGF, vascular endothelial growth factor.

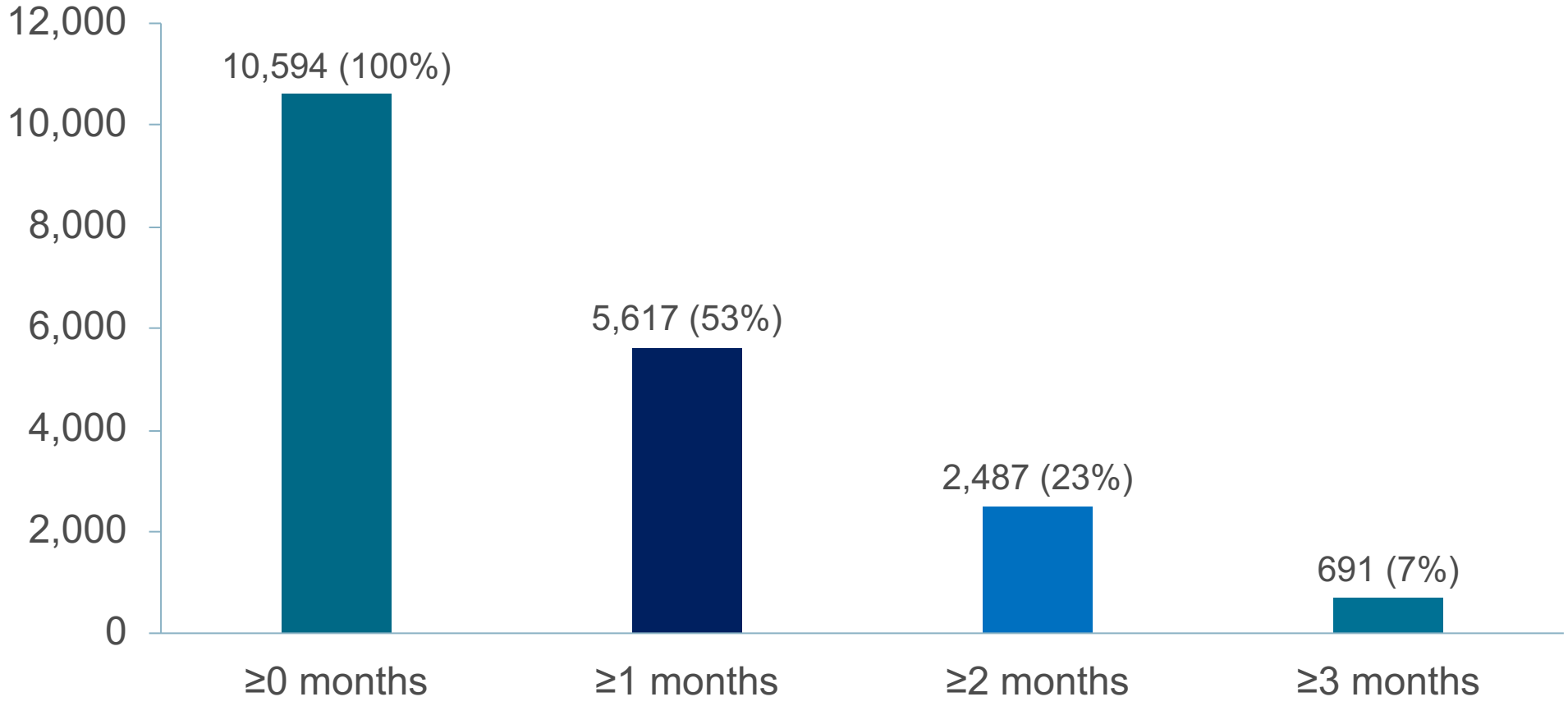
Anti-VEGF Treatment Interval in the 12 months Prior to Brolucizumab

	Brolucizumab eyes with prior anti-VEGF use* (n=9,926)	
Last injection interval (mean, SD, median) n=9,926	75.8 (156.0), 42.0 days	10.8 (22.3), 6.0 weeks
Average of last 2 intervals (mean, SD, median) n=9,743	65.3 (126.9), 42.0 days	9.3 (18.1), 6.0 weeks
Average of last 3 intervals (mean, SD, median) n=9,508	60.7 (110.3), 42.0 days	8.7 (15.8), 6.0 weeks

The median injection interval was 6 weeks prior to starting brolucizumab

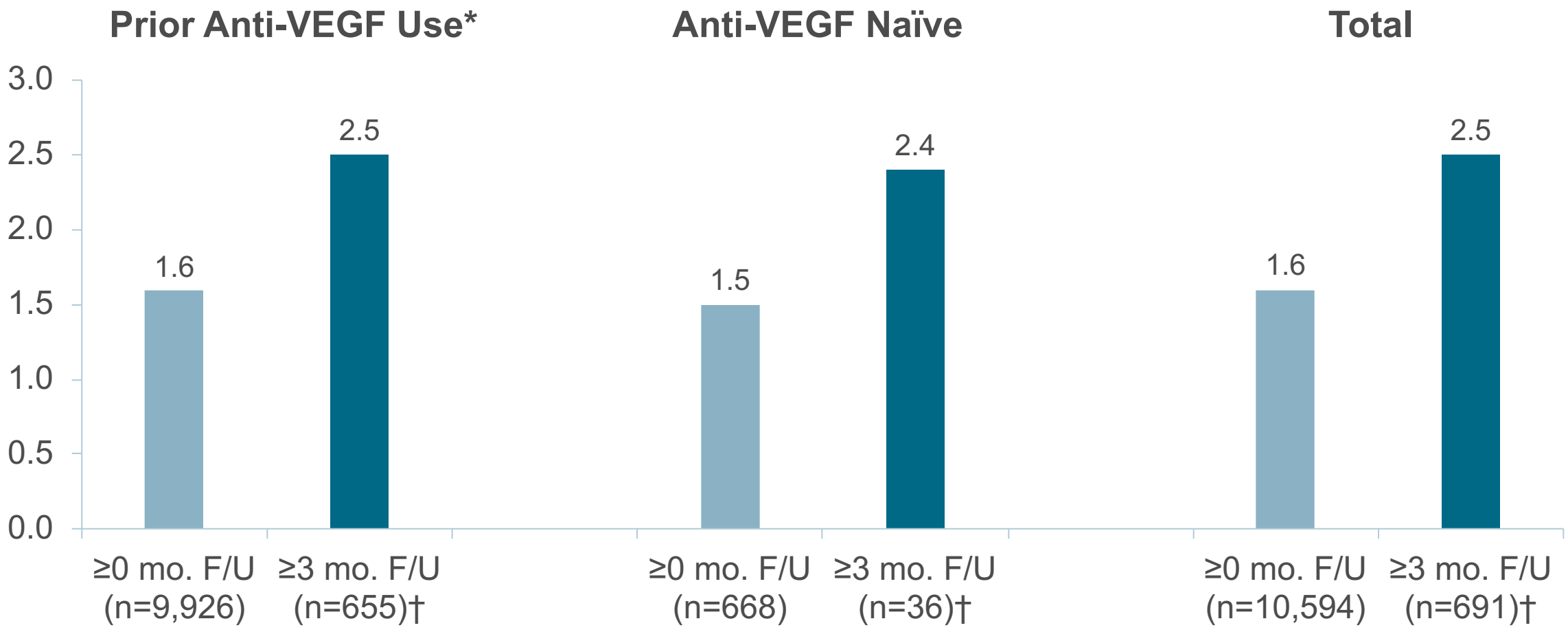
*In the 12 months prior to brolucizumab treatment
AFL, aflibercept; BEV, bevacizumab; mo, months; RAN, ranibizumab; SD, standard deviation; VEGF, vascular endothelial growth factor.

Number of Months of Follow-up after Brolucizumab Treatment



A small proportion of brolucizumab patient eyes had ≥3 months of follow-up data

Mean Number of Brolucizumab Injections in the 3-month Follow-up



*In the 12 months prior to brolucizumab treatment
†Subset of patients with ≥0 months of follow-up
FU, follow-up; mo, month; n, eyes evaluated; VEGF, vascular endothelial growth factor; ±, indicates standard deviation.

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