Diabetic Retinopathy Patients at Initiation of Anti-Vascular Endothelial Growth Factor Injection

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BACKGROUND

- Diabetic Retinopathy (DR) is a leading cause of vision impairment in the working-age population, with vision loss most commonly occurring due to diabetic macular edema (DME). It can also be a result of complications of proliferative DR.[1]
- The pathophysiology of DR is not fully understood. However, a protein called vascular endothelial growth factor (VEGF) has been identified as a key mediator of the progression of the disease. [1,2]
- The development of anti-VEGF pharmacological therapy has drastically changed the management of DME and is playing an expanding role in the management of DR. [1]
- As the management of DR continues to be impacted by the development of anti-VEGF therapy, it is important to understand current characteristics of DR patients being treated with anti-VEGF drugs.

OBJECTIVES

- The objective of this research was to characterize patients at the initiation of anti-VEGF therapy in diverse healthcare settings in the United States.

METHODS

- Patients from 3 specialty ophthalmology networks and 2 integrated delivery networks within the OMNY Health Database with any indication of DR (diagnosis codes: E11.31-E11.3599) and anti-VEGF therapy (procedure codes: J9035, J2778, J0178) from 2017-2022 were included.
- Demographic characteristics were tabulated at first DR diagnosis.
- Best corrected visual acuity (BCVA) results of the better-seeing eye were taken at the closest assessment within 30 days prior to anti-VEGF initiation.
  - BCVA results recorded as Snellen values were converted to Logarithm of the Minimum Angle of Resolution (LogMAR) values.
  - Descriptive statistics of LogMAR values were summarized.

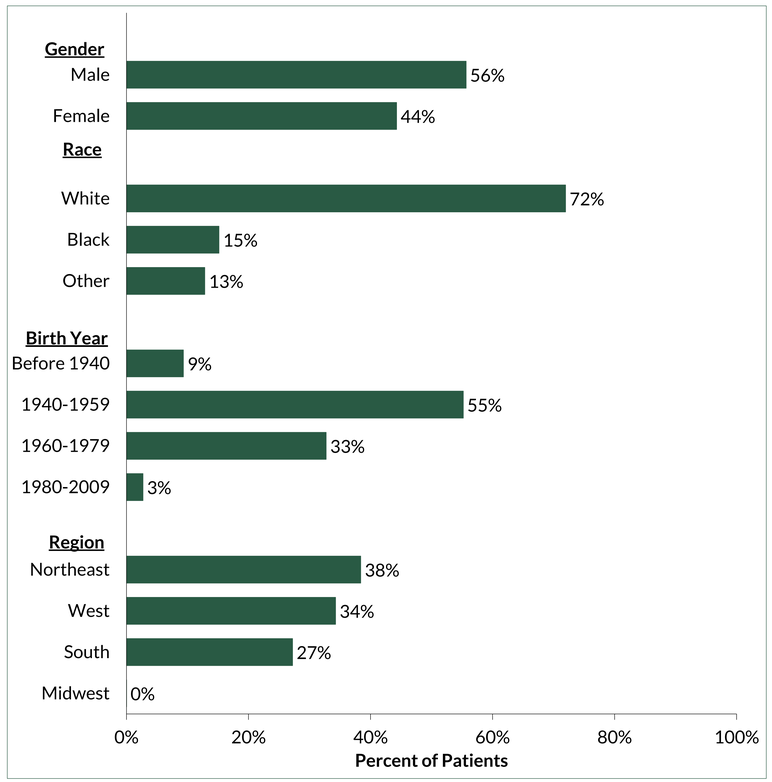
REFERENCES

1. Bahrami, B., Hong, T., Gilles, M. C., & Chang, A. (2017). Anti-VEGF Therapy for Diabetic Eye Diseases. *Asia-Pacific journal of ophthalmology (Philadelphia, Pa.)*, *6*(6), 535–545. https://doi.org/10.22608/APO.2017350
2. Yorston D. (2014). Anti-VEGF drugs in the prevention of blindness. *Community eye health*, *27*(87), 44–46.

RESULTS

- Across all years, a total of 6,861 unique DR patients with anti-VEGF administration were included.
- Demographic characteristics for the patient population are summarized in Figure 1.

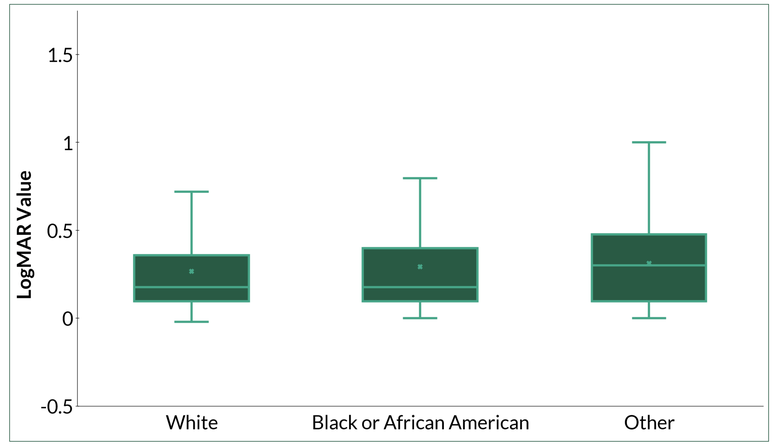
Figure 1: Demographic Characteristics of Study Population



Note: Percentages were based on non-missing data; 63% of patients had known racial categories.

- Within the study population, 39% of patients had BCVA scores recorded within the time period of interest.
- Among patients with a BCVA assessment, the mean LogMAR score was 0.308 (standard deviation = 0.328).
- Box and whisker plots of the distributions of BCVA values by documented racial category are presented in Figure 2:
  - Mean LogMAR values in descending order of better visual acuity were 0.267, 0.292, and 0.312 for White, Black or African American, and Other, respectively.
  - LogMAR distributions were skewed and exhibited much overlap between racial categories.

Figure 2: Box and Whisker Plots of BCVA by Racial Category



Note: Values based on non-missing data; 50% of patients with recorded BCVA values had a documented racial category.

DISCUSSION AND CONCLUSIONS

- Results provide insight into characteristics and visual impairment of DR patients at anti-VEGF initiation.
- Across racial categories, white patients had better visual acuity than black patients, with patients categorized as other having the worst.
- Further analyses would be helpful to better understand racial disparities in visual acuity at initiation of anti-VEGF therapy.

CONTACT INFORMATION

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