



Keratometry, Intraocular Pressure, and Visual Acuity at the Onset of Ophthalmic Conditions in the Real-World Setting



Lawrence Rasouliyan, Vikas Kumar, Amanda G. Althoff, Stella Chang, Stacey Long
OMNY Health, Atlanta, GA, United States

BACKGROUND

- Wet age-related macular degeneration (AMD), dry AMD, dry eye syndrome (DES), and glaucoma are common ophthalmic conditions that have been well characterized in terms of prevalence, burden, and pharmacoconomics.^{1,2,3,4}
- Commonly collected eye biometrics and visual function metrics in the real-world setting include ocular curvature (OC), intraocular pressure (IOP), and best corrected visual acuity (BCVA).
- While eye biometrics and visual function metrics are frequently collected in clinical trials for these common ophthalmic conditions,^{5,6,7} literature documenting their real-world values at disease onset is lacking.

OBJECTIVES

- The objective of this research was to characterize OC, IOP, and BCVA at the onset of wet AMD, dry AMD, DES, and glaucoma in the real-world setting.

METHODS

- Patients from 3 specialty ophthalmology networks from the OMNY Health Database with a diagnosis code for wet AMD (ICD-10: H35.32*), dry AMD (ICD-10: H35.31*), DES (ICD-10: H04.12*), or glaucoma (ICD-10: H40*) were included if they had at least 1 corresponding eye measurement at first diagnosis from 2017-2023.
- Snellen visual acuity metrics were converted to logarithm of minimum angle of resolution (LogMAR) values.
- Descriptive statistics for OC, IOP, and BCVA measurements were generated for the poorer- and better-seeing eyes separately at the first occurrence of each diagnosis code.

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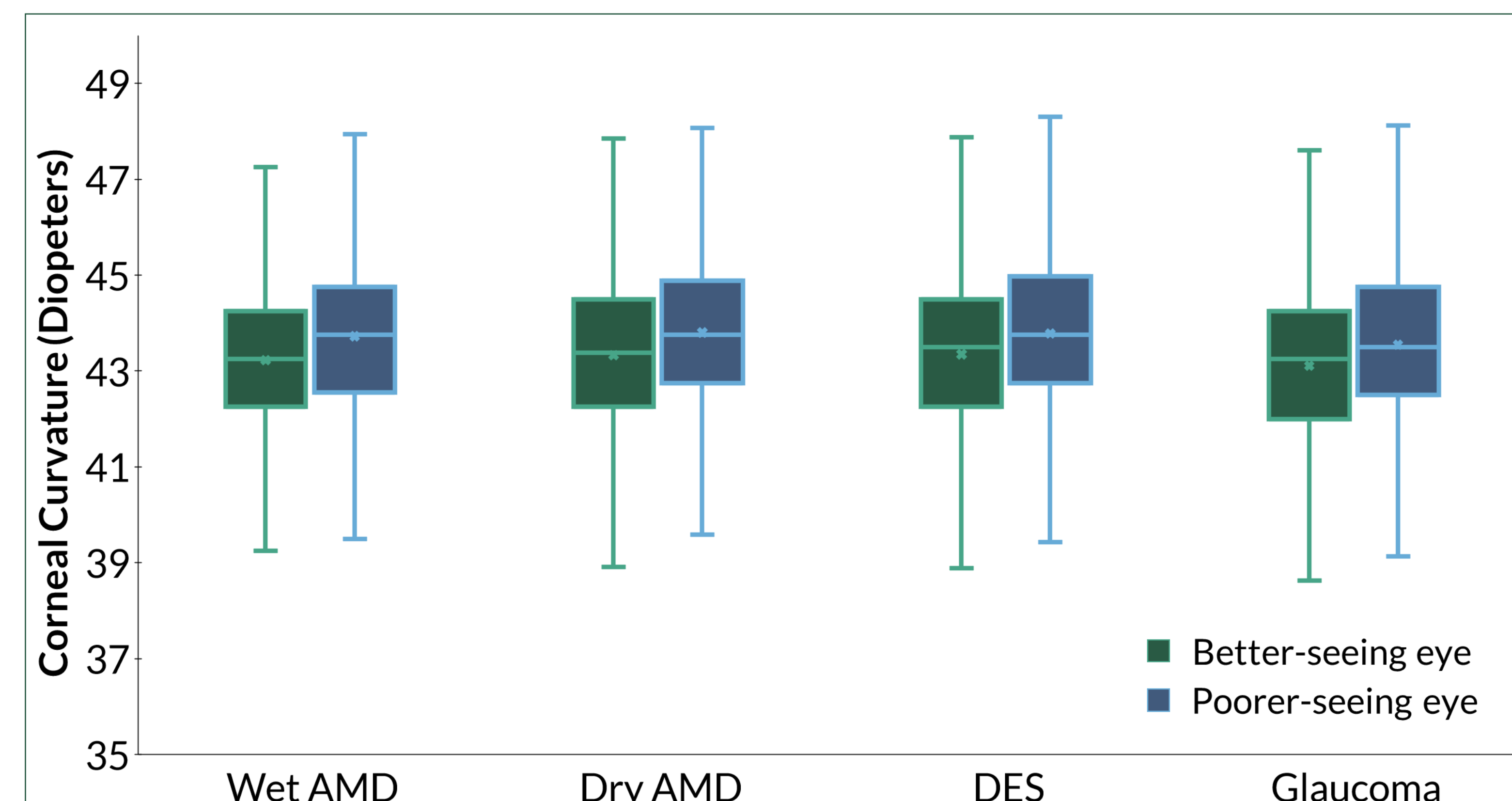
CONTACT INFORMATION

Lawrence Rasouliyan | Head, Biostatistics & Data Science | OMNY Health |
Email: lawrence@omnyhealth.com | Website: www.omnyhealth.com

RESULTS

- At least 1 of the specified eye measurements was available in 5,123, 42,602, 129,683, and 120,725 patients for wet AMD, dry AMD, DES, and glaucoma, respectively.
- OC value distributions in the poorer- and better-seeing eyes by ophthalmic condition are presented in Figure 1:
 - OC values were similar across all conditions.
 - Mean values ranged from 43.9 to 44.4 diopters with slightly smaller values observed in the better-seeing eyes.

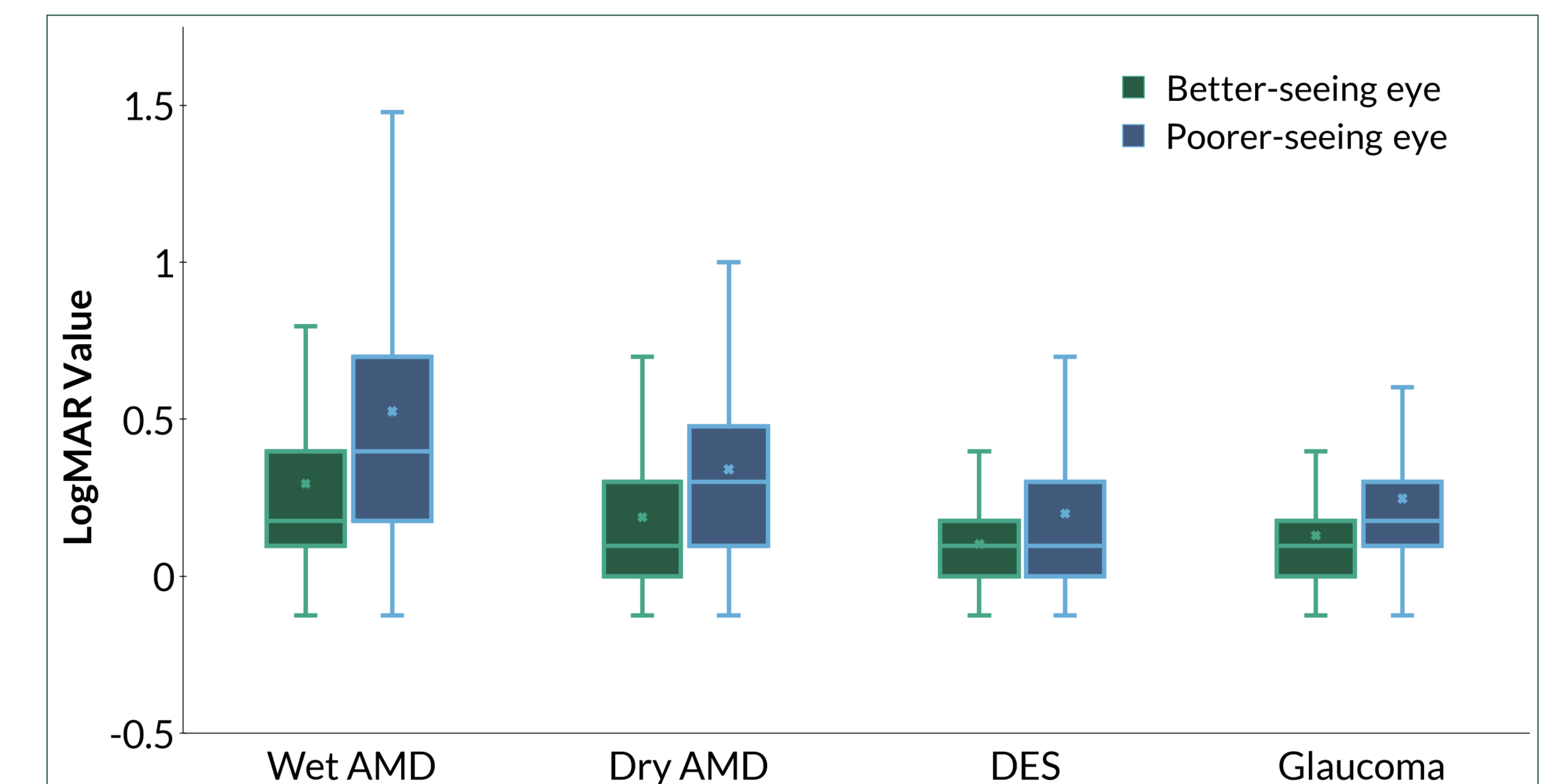
Figure 1: Box and Whisker Plots for OC Values by Condition



AMD = age-related macular degeneration; DES = dry eye syndrome; OC = ocular curvature

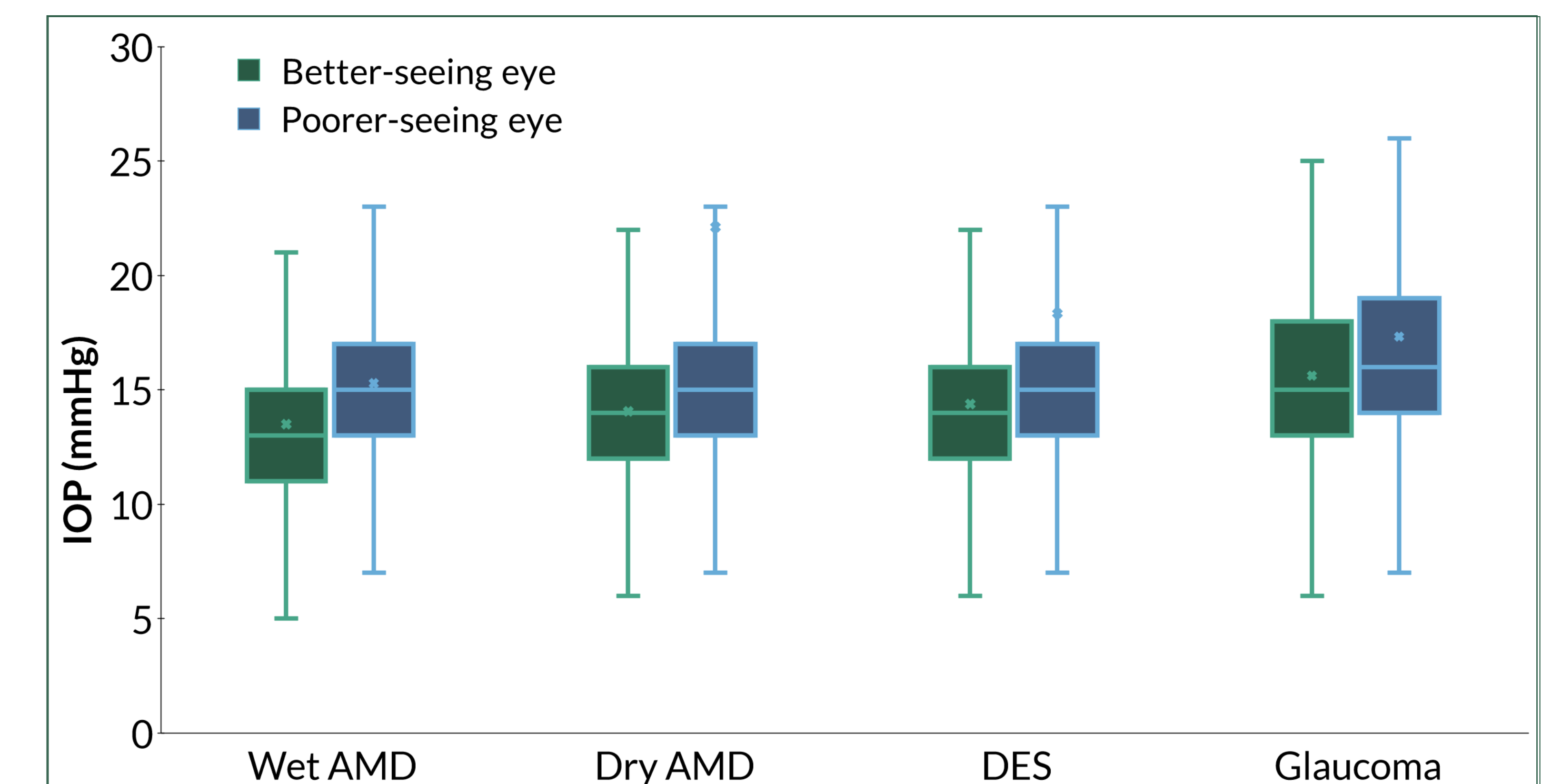
- The distributions of LogMAR BCVA values in the poorer- and better-seeing eyes for each ophthalmic condition are presented in Figure 2:
 - Mean LogMAR BCVA values in the poorer-seeing eyes were 0.538 for wet AMD, 0.331 for dry AMD, 0.238 for glaucoma, and 0.190 for DES.
 - Mean values in the better-seeing eyes for these conditions were associated with notably better vision (0.295, 0.184, 0.126, and 0.097, respectively).
- Box and whiskers plots for IOP values in the poorer- and better-seeing eyes are presented in Figure 3:
 - Mean IOP measurements in the poorer-seeing eye were 15.4, 19.0, 17.6, and 17.3 mmHg for wet AMD, dry AMD, glaucoma, and DES, respectively.
 - Mean IOP measurements in the better-seeing eye were notably lower in value (13.6, 14.1, 15.8, and 14.5, respectively).

Figure 2: Box and Whisker Plots for LogMAR Values by Condition



AMD = age-related macular degeneration; DES = dry eye syndrome; LogMAR = logarithm of minimum angle of resolution

Figure 3: Box and Whisker Plots for IOP Values by Condition



AMD = age-related macular degeneration; DES = dry eye syndrome; IOP = intraocular pressure

DISCUSSION AND CONCLUSIONS

- Results provide insight into characteristics of OC, IOP, and BCVA measurements at the onset of various ophthalmic conditions in the real-world setting.
- These values may help benchmark baseline measurements for these conditions.