

## Differential Characteristics in Enrollment in Age-Related Macular Degeneration Clinical Trials: A Cross-Sectional Study

Brendan Tao<sup>1</sup>, BHSC, Jim Xie<sup>2</sup>, Cody Lo<sup>3</sup>, MD, Peng Yan<sup>4</sup>, MD, FRCSC, Radha Kohly<sup>4</sup>, MD, PhD, FRCSC,

<sup>1</sup>Faculty of Medicine, University of British Columbia

<sup>2</sup>Michael G. DeGroot School of Medicine, McMaster University

<sup>3</sup>Department of Ophthalmology, University of Ottawa

<sup>4</sup>Department of Ophthalmology and Vision Science, University of Toronto

**Introduction:** Evidence indicates inequitable enrollment of some demographics into trials for certain ophthalmic diseases. Representative trial enrollment is necessary to accurately extend conclusions on safety and efficacy to real-world populations. This study investigates demographic characteristics in age-related macular degeneration (AMD) trial enrollment.

**Methods:** Cross-sectional study. We included AMD patients enrolled in US-registered, high-quality, randomized controlled trials (RCTs). Clinicaltrials.gov was searched with “age-related macular degeneration” to identify RCTs with double, triple, or quadruple masking. Trial (e.g., study location, phase, masking, trial initiation year, and sponsor origin) and demographic data were collected. Sex-based AMD disease burdens were retrieved from the Global Burden of Disease database to calculate pooled female population-to-prevalence ratios (PPRs). Equitable trial enrollment was defined as PPR between 0.8-1.2. Demographic proportions were evaluated across trial characteristics using the Kruskal-Wallis test ( $\alpha=0.05$ ) followed by post-hoc comparisons. Pooled PPR for female enrollment. Secondary outcomes of interest included the association of trial characteristics with sex, race, and ethnicity.

**Results:** From 1999 records, we included 106 eligible trials spanning between 1990-2020. All trials ( $N=77,939$ ) reported sex demographics with a pooled female PPR of 0.88 (95% confidence interval [CI]: 0.82, 0.94). Female enrollment was 36,109 (46.3%) out of 77,939 participants. Of the 74 (69.8%) trials that adequately detailed race, White participants comprised the largest group ( $N=57,917$ ; 82% of total participants). Thirty-seven (34.9%) trials adequately detailed ethnicity.

**Conclusions:** This study primarily sought to determine whether AMD trials adequately enrolled female participants. Our results indicate representative female enrollment compared to their disease burden, thereby furthering confidence in their generalizability to this population. Female enrollment held consistent across strata of all trial characteristics (study phase, region, sponsor, initiation year, and intervention type). However, race and ethnicity were often under-reported and minority groups composed a minority of participants, which generally held across trial characteristics. Future studies should prioritize representative racial and ethnic enrollment to optimize trial result generalizability.