

# Patterns of Glaucoma Medication Adherence over Four Years of Follow-Up

Newman-Casey PA (1) , Blachley T (2) , Lee PP (3) , Heisler M (4) , Farris KB (5) , Stein JD (3)

1 Department of Ophthalmology and Visual Sciences, University of Michigan Medical School, Ann Arbor, Michigan; University of Michigan Institute for Health Care Policy and Innovation, Ann Arbor, Michigan. Electronic address: panewman@med.umich.edu.

2 Department of Ophthalmology and Visual Sciences, University of Michigan Medical School, Ann Arbor, Michigan.

3 Department of Ophthalmology and Visual Sciences, University of Michigan Medical School, Ann Arbor, Michigan; University of Michigan Institute for Health Care Policy and Innovation, Ann Arbor, Michigan.

4 University of Michigan Institute for Health Care Policy and Innovation, Ann Arbor, Michigan; Department of Internal Medicine, University of Michigan Medical School, Ann Arbor, Michigan.

5 School of Pharmacy, University of Michigan, Ann Arbor, Michigan.

**PURPOSE:** To assess longer-term patterns of glaucoma medication adherence and identify whether patterns established during the first year of medication use persist during 3 subsequent years of follow-up.

**DESIGN:** Retrospective, longitudinal cohort analysis.

**PARTICIPANTS:** Beneficiaries aged >40 years who were enrolled in a United States (US) -managed care plan for >7 years between 2001 and 2012 and newly diagnosed and treated for open-angle glaucoma.

**METHODS:** For each enrollee, we quantified medication adherence using the medication possession ratio. Group-based trajectory modeling (GBTM) was applied to identify patterns of adherence for 1 and 4 years of follow-up. The percent of beneficiaries who remained in the same trajectory group in the 1- and 4-year models was tabulated to evaluate group stability. Factors impacting adherence at 1 and 4 years were identified using regression analyses.

**MAIN OUTCOME MEASURES:** Patterns of glaucoma medication adherence.

**RESULTS:** Of the 1234 eligible beneficiaries, GBTM identified 5 distinct glaucoma medication adherence patterns in both the 1-year and 4-year follow-up periods. These groups were as follows: (1) never adherent after their index prescription fill (7.5% and 15.6% of persons in the 1- and 4-year models, respectively) ; (2) persistently very poor adherence (14.9% and 23.4% of persons in the 1- and 4-year models, respectively) ; (3) declining adherence (9.5% and 9.1% of persons in the 1- and 4-year models, respectively) ; (4) persistently moderate adherence (48.1% and 37.0% of persons in the 1- and 4-year models, respectively) ; and (5) persistently good adherence (20.0% and 15.0% of persons in the 1- and 4-year models, respectively) . More than 90% of beneficiaries in the 4 groups with the worst and best adherence patterns (groups 1, 2, 3, 5) maintained their patterns from their first year throughout their 4 years of follow-up. Those with persistently moderate adherence (group 4) , the largest group, were most likely to change groups from 1 to 4 years of follow-up. Persons with the best adherence over 4 years were more likely to be white, to be older, to earn

>\$60 000/year, and to have more eye care visits (P CONCLUSIONS: For most patients who were newly prescribed glaucoma medications, adherence patterns observed in the first year of treatment reflect adherence patterns over the subsequent 3 years. Investing resources in both identifying and helping patients with suboptimal adherence patterns over the first year may have a large impact on longer-term adherence.

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