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.

Copyright © 2015 American Academy of Ophthalmology. Published by Elsevier Inc. All rights reserved.


PMID: 26319441