

Prescribing Patterns of Glaucoma Medications: A Regional and Provider Type Analysis

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Importance:

Glaucoma, a leading cause of irreversible blindness, requires effective pharmacological management to control intraocular pressure and prevent disease progression. Variations in prescribing patterns can influence treatment efficacy, cost, and patient outcomes (Weinreb, Aung, & Medeiros, 2014).

Objective:

This study investigates the most commonly prescribed medications for glaucoma and examines variations in prescribing patterns by region and provider type using Medicare Part D data, with a focus on understanding regional differences and cost impacts (European Glaucoma Society, 2020).

Design, Setting, and Participants:

We analyzed a dataset of Medicare Part D prescriptions for glaucoma medications from the most recent CMS dataset available at the time of analysis (2024). The study included prescriptions from multiple states, focusing on regional differences and provider-specific trends in medication selection (Medicare Part D).

Main Outcomes and Measures:

Prescription counts for each medication were aggregated. Chi-square tests evaluated regional variations, while t-tests were used to compare medication costs across states. The analysis also categorized prescribing by provider type (ophthalmologists vs. optometrists).

Results:

Brimonidine tartrate, timolol maleate, and latanoprost were the most prescribed medications. States like Florida, California, and Texas had the highest prescription volumes, with a preference for combination therapies in these regions. Cost differences were significant between Florida and California ($p = 0.0002$). Ophthalmologists prescribed over 95% of glaucoma medications, while optometrists preferred first-line treatments like timolol and latanoprost.

Conclusions and Relevance:

This study highlights important regional and provider type variations in glaucoma medication prescribing patterns. These differences may help optimize treatment strategies, improve cost-effectiveness, and reduce regional disparities in glaucoma care.

Works Cited

1. Weinreb, R. N., Aung, T., & Medeiros, F. A. (2014). The pathophysiology and treatment of glaucoma: A review. *JAMA*, 311(18), 1901-1911.
2. European Glaucoma Society. (2020). Terminology and guidelines for glaucoma (5th ed.). *European Glaucoma Society*. Retrieved from <https://www.eugs.org>
3. Medicare Part D and Trends in Glaucoma Therapy. Retrieved from <https://www.aaojournal.org>