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Are you compliant with addressing glaucoma adherence?

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How common is poor adherence in glaucoma?

Glaucoma is a leading cause of blindness. Eye care providers most commonly use ocular hypotensive medications (94% of the time¹) when treating ocular hypertension and glaucoma patients. Treatment reduces the development or worsening of glaucoma by approximately 60%.^{2, 3} However, adherence with prescribed glaucoma treatments is poor. A recent study showed that only 56% of patients used more than 75% of the expected doses.⁴ Studies using pharmacy records have shown that only 50% of glaucoma patients have a refill of their medication within 6 months of initial dosing.⁵

What is the cost of poor adherence?

The cost of poor adherence in medicine are staggering. Studies estimate that poor adherence costs over \$100 billion annually; results in 125,000 excess deaths; and causes 20% of all hospitalizations.⁶

The economic cost of poor adherence with glaucoma treatment and how it alters the risk of visual impairment is unclear. One study found that patients with “poor compliance with medical and surgical recommendations” had increased glaucomatous progression when compared to those with “good compliance” (50% vs. 10%, OR=8.6, p<0.001). One caveat is that the authors did not delineate between medical and surgical compliance. In addition to increased risk of glaucomatous progression, noncompliant glaucoma patients may have a higher risk of visual impairment; waste unused medications; may require additional medications; and if their disease worsens- more eye care visits, additional diagnostic tests, and earlier surgery.

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C. Everett Koop, the former U.S. Surgeon General, famously remarked, “Drugs don’t work in patients who don’t take them”. Researchers define “compliance” as the extent to which patients take medications as prescribed by their health care provider. Some researchers prefer the term “adherence,” since it suggests a treatment alliance between the patient and provider. However, both terms are imperfect descriptions of medication-taking behavior. For this editorial, I use adherence as the descriptive term for taking medications as prescribed.

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A minority view is that poorly adherent patients do not result in increased economic costs since they attain fewer refills of medications. This is unlikely considering that medications accounted for a minority of the costs of glaucoma⁷ when compared to visual impairment costs, productivity losses, and nursing home placements- as well as the other expenses of worsening glaucoma. Also, the OHTS showed a small increased risk of cataract surgery in those treated with ocular hypotensive medications (7.6% vs. 5.6% over 5 years, Hazard ratio 1.56), but showed no significant change in foveal sensitivity, LOCS III score, or visual acuity.⁸ Even if a small increase in cataract occurs with ocular hypotensive medications, it is unlikely that the economic cost of excess cataract surgery and the rare surgical complications outweighs the benefits of treatment. Overall, studies examining the cost of poor adherence with glaucoma treatment and its effect on visual impairment and blindness are needed.

How do we determine adherence?

Glaucoma adherence is difficult to measure. Patients routinely overstate their level of adherence as compared with objective measures.⁹ Intraocular pressure is a poor surrogate for adherence since patients commonly increase their adherence in the day prior to visiting their eye care provider.¹⁰ Observational methods (e.g. trained observer witnessing the administration) are impractical and intrusive. Pharmacy records may be valid for measuring compliance of large groups, but can be inaccurate for individual patients¹¹ and difficult to attain. Objective methods, such as electronic dose monitors, are the best method of measuring compliance but they are available free of charge for only one eye drop medication; are cumbersome in a clinical setting; have varying accuracy; patients may falsify use; and eye care providers do not have an incentive to use them. Clinicians can purchase the MEMS cap, which uses a bottle within a bottle design to objectively measure compliance.¹² This method is unlike the clinical setting since it requires extra steps including: unscrewing the MEMS cap, removing the eye drop bottle, replacing the bottle in the MEMS cap container, and replace the MEMS cap. Overall, an accurate, unobtrusive, objective method of determining and monitoring adherence is still needed.

Why do glaucoma patients not use their medications?

Friedman found lower adherence with certain physician beliefs (“reactives” and “skeptics”), low patient education, low risk of vision loss, higher costs of medications, longer travel distance; increased side effects, and in those aged <50 years and those ≥ 80 years.¹³ This studies as well as other studies (not listed) suggest multiple reasons for poor adherence in glaucoma patients, but provide neither clear explanations nor lucid interventions towards improving adherence.

Health Behavior models may provide a more comprehensive explanation of adherence with glaucoma medications. These models have been correlated with adherence with breast self-examinations, condom use, psychiatric medications, coronary heart disease, diabetes treatments, burn treatments, vaccinations, and exercise programs. For example, the Health Belief Model constructs include *Severity* of the disease, *Susceptibility* to the disease, the *Benefits* offered by a recommended action, *Barriers* to taking said action, *Self-Efficacy* (individual’s perception of their ability to perform a recommended action), and *Cues-to-Action* (external encouragements to perform a recommended action). The model suggests that limitations in any of these factors will result in worse adherence. Further studies using health behavior models may explain and characterize the motivations for glaucoma adherence.

How do you address adherence with your glaucoma patients?

Some researchers consider poor adherence as a condition in itself requiring constant vigilance, reinforcement, and cooperation between the clinician and patient. Studies have shown that multimode interventions are more effective than a single type of intervention for improving adherence for a group of patients.¹⁴ However, eye care providers do not have a valid method of surveying the factors related to adherence in patients. For example, a patient who frequently misses their eyes during administration of their drops may become frustrated, both at the waste of a costly medication and with his or her own ability to perform the task. A clinician who knows this in advance can demonstrate different ways of administering the drops.

Therefore, one must address adherence on an individual basis and the first step is to have a good rapport with your patient. The second step is to ask about adherence using open questions in a “safe” environment. For example, “It can be hard to use your eye drops. How often do you think you miss them?” These types of statements will give a basic starting point for addressing adherence. As stated previously, patients will over estimate their adherence and may not admit to difficulty.

Measuring, educating, reinforcing, and treating adherence with glaucoma medications creates time constraints especially when declining reimbursements requires providers to examine more patients. Perhaps, eye care providers would incorporate methods of measuring and improving adherence if 3rd party payers provided incentives similar to those given to providers to encourage patients to stop smoking or as part of a Physician Quality Reporting Initiative. However, this should not occur until studies document the short- and long-term success of glaucoma interventions.

Poor adherence with glaucoma medications is common and results in increased risk of visual impairment and blindness. The glaucoma community needs research in the direct and indirect costs, better methods to measure, and strategies for treating poor adherence. Then we can be more compliant in addressing adherence.

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Biography



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