Improving Medication Adherence to Reduce Vision Loss in Patients with Glaucoma: Low Hanging Fruit?
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Nonadherence with glaucoma medications is ubiquitous and well known. Failure to take medications as prescribed can result in decreased treatment effectiveness and outcomes, increased complications, worsened health status, and higher overall healthcare costs. While the number is unknown, each year many individuals with glaucoma—diagnosed and undiagnosed—will lose vision. Although approximately half of all patients with glaucoma do not follow their medication regimens1 or discontinue medication use within 6 months,2 9% of all prescriptions are never even filled.3

Even when medications are provided at no cost and patients are aware that they are being monitored, adherence rates are only approximately 70%.4 Patients fail to adhere to recommended medication regimens for many reasons, including the absence of disease symptoms, low levels of health literacy, not understanding the importance of treatment, difficulty in administration, mental health status, or forgetfulness, among others.5 Patients with lower adherence rates have poorer outcomes,6 although this has not yet been demonstrated in long-term studies. Attempts to address glaucoma medication nonadherence have not resulted in durable behavior change and significantly improved adherence rates.1,2 This may be a function of study design, and trials with longer-term end points are needed. Medications are the first-line treatment for glaucoma, and improving adherence can result in better control of intraocular pressure.7 Medications can slow glaucoma progression and reduce vision loss, but poor adherence leaves thousands of Americans each year with vision loss that could have been prevented.

In this issue, Newman-Casey et al8 report (see page 1308) the outcomes after using cross-sectional survey data from 190 patients with glaucoma to identify the most frequent barriers to adherence. Patients were asked to rate 10 commonly cited barriers, with life stress included as an 11th choice. The same barriers were the top 3 for both adherent and nonadherent patients—forgetfulness, difficulties with instilling eye drops, and medication schedules—with 61% of participants citing multiple barriers. Approximately half of each group was skeptical that glaucoma would lead to vision loss, which of course would make them less likely to adhere to medication protocols. The convenience sample by Newman-Casey et al emphasized patients with long-term medication use, and therefore was skewed toward those who are likely to be more adherent, because patients tend to manifest nonadherence early in the course of their treatment and would not have been included in the sample. Particularly noteworthy is their inclusion of the Health Belief Model based on an individual’s perceptions of the importance and effectiveness of treatment and their own ability to overcome the challenges of adherence, that is, self-efficacy. Focusing on patient perceptions and beliefs is an important component of patient engagement; using patient-centered constructs to address patient-specific issues such as adherence has great promise. Using the Health Belief Model and self-efficacy theory in clinical practice can help to educate patients efficiently and effectively and to reinforce their ability to affect the course of glaucoma.

There is, however, no free lunch. Although highly desirable,9 physician–patient communication is an often overlooked but essential element in engaging patients in their own care. When physicians communicate well, adherence rates are 19% higher than for patients whose physicians communicate less effectively, and physicians who receive training in effective communication are able to increase their patients’ adherence by 12%.10 Friedman et al11 found that 14% of patients do not understand that they are at risk for vision loss, and among these patients, nonadherence is particularly high. Health (il)literacy’s contribution to nonadherence has been understudied. As health literacy levels decline, the importance of effective physician–patient communication increases; patient instructions won’t work if they can’t be read and, even then, do not address patient-specific questions. Decreased health literacy places additional burdens on ophthalmologists to be sure that their patients understand the need for and proper use of their medications.

Patient–physician communication enhances the opportunity for information to be clarified, absorbed, and incorporated into patients’ routines. Effective communication, however, requires time and “the problem with physician–patient communications is the illusion that it occurred.”12 Tarn et al13 found that in an average office visit of 16 minutes, only 5% (49 seconds) was spent discussing new medications and their proper use. Moreover, most communication between physicians and patients tends to be unilateral. Increasing patient participation enhances the opportunity for information to be absorbed and used. Focusing on patients who are nonadherent requires meaningful, skilled physician inquiry as well as patient
rapport. The need to see more patients makes it unlikely that most physicians will commit the time necessary to identify their patients at risk for nonadherence so that they may focus attention on them. Because of the high rate of nonadherence, it may be more efficient to address reminders and other efforts toward all patients.

Using professionals including psychologists, social workers, nurse educators, pharmacists, and others to involve patients in their care and to educate them about the consequences of nonadherence may be helpful. However, like physicians, their time is limited. Developing reimbursement models allow other professionals to work with patients to understand glaucoma and to help with adherence to treatment regimens, which could expand options for communication while also relieving physicians of this time-consuming task. Patients can’t use information they don’t have.

Another important consideration for future studies is the inclusion of subpopulations at elevated risk, such as blacks and Hispanics, and the need for subgroup analyses. Quigley and Vitale18 estimated the prevalence rate for black persons older than 40 years to be 4.62%, approximately 3 times the rate for white persons (1.55%), with glaucoma rates in Hispanics being approximately the same as those for blacks. Moreover, blindness resulting from glaucoma is at least 6 times more prevalent among blacks.19 Friedman et al found being black a strong predictor of nonadherence. In fact, Dreer et al16 found race to be the only independent predictor of adherence, with black persons approximately one third less likely than white patients to adhere to medication regimens. The poorest adherence with glaucoma therapy is among black patients,17 the group most at risk of having glaucoma and therefore the group who should receive increased and specially focused attention.

Efforts to improve adherence should focus on differences and disparities in healthcare access and use among population subgroups and should be culturally sensitive. Health and cultural beliefs play a role in nonadherence and contribute to disparities in outcomes, because suspicion and mistrust of the medical system, particularly among black patients, have been identified as factors associated with nonadherence.18 Trust is related to the extent that patients adhere to prescribed medications and maintain long-term medical care relationships.19 Ignoring race- or ethnicity-based differences underplays their importance in improving medication adherence rates in glaucoma.

Finally, medication reminders improve adherence.20 Boland et al11 found that adherence was improved 35%, from a base rate of 54% to 73% using telephone or text medication reminder messages. The type of reminder may be a critical factor. For example, Saeedi et al21 found that e-mail and texting may be useful, but only with younger patients. Other kinds of reminders also may be demographic specific, but this has not yet been established and warrants further investigation.

Treating glaucoma without addressing nonadherence is inefficient for physicians and ineffective for patients; medications work only if used properly. When medications are ineffective—regardless of whether it’s due to nonadherence, efficacy, or other factors—laser treatment or incisional surgery can be effective and do not require patient adherence, only surgical consent. For patients receiving medications to control intraocular pressure, reminder systems coupled with good patient communication can help. However, no treatment can effectively address glaucoma that has not been diagnosed. Greater efforts should focus on early diagnosis so that appropriate treatment can be initiated as early as possible. Medication nonadherence in patients with glaucoma is epidemic. Improving adherence can help reduce vision loss in individuals with glaucoma and should be a top public health priority.

References


Pictures & Perspectives

Warty Dyskeratoma of the Eyelid

Warty dyskeratoma (WD) of the right lower eyelid in a 60-year-old woman presenting as a slowly growing papule. Benign and malignant epithelial neoplasms were considered in the clinical differential (Fig 1). Histologically, the lesion was an endo-exophytic epithelial neoplasm composed of uniform keratinocytes with zones of acantholysis and dyskeratosis with corps ronds and corps grains (Fig 2). The cause of WD is unknown. The presence of acantholysis and dyskeratosis suggests a localized error in epithelial maturation and cohesiveness akin to that seen in Darier disease (ATP2A2 mutation). Attempts to define human papillomavirus as pathogenic have been uniformly unsuccessful.

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