

Glaucoma and Primary Care

We are treating the whole patient, not just his or her eyes.

BY JODY PILTZ-SEYMOUR, MD

I firmly advocate a holistic approach to glaucoma care. Although we glaucomatologists concentrate on the IOP, the optic nerve, and the results of optical coherence tomography and visual field testing, we must remember that the health of our patients' eyes is closely related to the health of their bodies. Numerous systemic conditions can affect glaucomatous pathophysiology, either directly or indirectly. Poor nutrition, poor circulation, and toxic exposure can all influence overall ocular and systemic health. Working collaboratively with a patient's primary care physician (PCP) is therefore vital to achieving the patient's best ocular health, and open lines of communication help all involved provide the best care.

THE MAIN SYSTEMIC CONDITIONS THAT AFFECT GLAUCOMA

Cardiovascular health is intimately associated with the prevalence of glaucoma and the patient's prognosis. Systemic hypotension, with reduced ocular perfusion pressure, significantly increases the risk of glaucomatous progression. Multiple studies, including the Baltimore Eye Survey and the Egna-Newmardkt Study, have demonstrated a marked increase in glaucoma risk when diastolic perfusion pressure (diastolic blood pressure - IOP) drops below 50 to 70 mm Hg.^{1,2} Increased fluctuation in ocular perfusion pressure, acute shock-like episodes, and great nocturnal dips in blood pressure also elevate the risk of progressive glaucoma.

Low systemic blood pressure may result from the overly zealous treatment of systemic hypertension. For that reason, I send a simple letter to my patients' PCPs that explains the strong relationship between low blood pressure and progressive glaucoma and the implications for each specific patient (eg, one eye, end-stage damage). I recommend specifically asking the PCP to

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decrease the hypotensive therapy if he or she feels that doing so will not seriously compromise the patient's cardiovascular health. Low blood pressure in people not on systemic hypotensive therapy is more difficult to address. These patients should be encouraged to remain hydrated and not to severely restrict their salt intake. The efficacy of therapies such as mineralocorticoids, salt supplementation, and magnesium is unclear.

Migraine headaches and vascular dysregulation with peripheral vasospasm are also risk factors for glaucoma.³ In addition, long-standing systemic hypertension can lead to atherosclerosis and autonomic dysfunction, both of which can contribute to ongoing glaucomatous damage. A recent study found an association between primary open-angle glaucoma and specific patterns of heart rate variability, indicating cardiac autonomic dysfunction.⁴

An increased risk of glaucoma and/or its progression has also been reported in patients with rheological abnormalities, abnormal platelet aggregation, anemias, autoimmune disease, thyroid disease (particularly Graves ophthalmopathy), sleep apnea syndrome, and ischemic brain disease. Any disorder causing inflammation or ischemia-reperfusion injury can lead to progressive glaucoma.⁵

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MEDICAL CONCERNS

We clinicians must have a thorough knowledge of our patients' medications. We are all well aware that glaucoma drops can interact with systemic medications and systemic conditions. For example, β -blockers can exacerbate asthma, and α -adrenergic blockers can worsen symptoms of Sjögren syndrome. Many more subtle interactions with which we must be familiar are outside the scope of this brief article. In addition, numerous systemic medications can directly influence glaucoma risk. These drugs include agents that cause mydriasis or choroidal effusion, thus increasing the risk of angle closure.⁶

Multiple systemic conditions can influence patients' use of topical glaucoma therapy. For example, Parkinson disease, essential tremor, cerebrovascular accidents, and aging can physically impair patients' ability to instill drops. Dementia, depression, and other mental health issues can also cause patients to be irregular in their use of glaucoma medication and decrease their compliance with scheduled visits.

WHAT IS A GLAUCOMA DOCTOR TO DO?

Exercise Vigilance

I check the patient's list of medications and inquire about the conditions for which the drugs were prescribed, especially if there have been changes. I note the number of medications that lower blood pressure as well as any supplements he or she is taking, particularly if they are numerous or in large multiformulations. I recommend checking patients' blood pressure, if possible, especially if they are on multiple medications and/or have progressive glaucoma.

Although the disease's link to glaucoma is unclear, it remains important for all of us to ask diabetics about their HgA1C levels, blood sugar stability, and the systemic impact of their diabetes.

Before the slit lamp obscures patients, I take a good look at them and assess their general well-being. Are they overweight? Have they lost a lot of weight since their last visit? Do they appear to have difficulty breathing? My mentor, Stephen Drance, MD, always greeted

patients with a handshake, during which he would assess them for peripheral vasospasm. I look for floppy eyelids and ask affected patients about snoring, because both may indicate sleep apnea.

Communicate

I start each encounter with patients with an open-ended question such as, “How have you been?” This is the time to find out about recent illnesses, hospitalizations, or major life stresses. Like some colleagues, I have observed that traumatic events can lead to a temporary increase in IOP. This initial exchange gives me an opportunity to comfort patients and, if a temporary pressure elevation is not vision threatening, to reassure them and reevaluate them at a future date.

Communication—with patients, their PCPs, and their relatives, if permitted—is key. It is important for the PCP to know that a patient has glaucoma and the implications of his or her visual impairment. The primary doctor needs to be aware of the patient's glaucoma medications and possible interactions as well as the influence of glaucoma on the patient's mental health. I alert PCPs to any pertinent findings from the history or examination (eg, floppy eyelids, hypertension, diabetic retinopathy).

CONCLUSION

All of us need to remember to treat the whole person. Smoking cessation, a healthy diet, regular exercise, and diabetes management make for healthier patients. A well-known joke is that, as long as our patients can see when they die, their treatment was a success. In reality, I view success as helping patients not just have sighted lives but long, healthy, sighted lives. ■

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