

MATCHING GLAUCOMA TREATMENTS TO PATIENTS

With more options for open-angle disease, we can tailor therapy to each patient.

BY ARSHAM SHEYBANI, MD



For some diseases, treatment decisions are clear-cut. Observation, medication, and surgery neatly align to objective clinical observations and diagnostic test scores. Glaucoma is not that kind of disease. We doctors make decisions for the individual, not just according to the numbers but also based on many other aspects of a patient's health status and lifestyle.

For those of us who enjoy complex problem solving and like to learn about patients' lives, this multifactorial process provides just the right challenge. The rewards are more exciting than ever before, thanks to recent advances in treatments for open-angle glaucoma.

AGE, STAGE, AND THREE QUESTIONS

After a diagnosis of open-angle glaucoma, two high-level characteristics outside of IOP affect every treatment decision we make: age and stage. We stage patients' disease as mild, moderate, or advanced based on their visual field and optic nerve appearance.

Treatment decisions are complexly influenced by the patient's age and disease stage. A 40-year-old patient with mild disease facing 50 years of progression warrants aggressive treatment, whereas a 95-year-old with advanced disease might benefit from less aggressive management.

Beyond age and stage of disease, three questions help determine the direction that treatment will take:

1. Is the pressure at or above the goal?
2. Does the patient tolerate currently prescribed medication?
3. Is there a cataract?

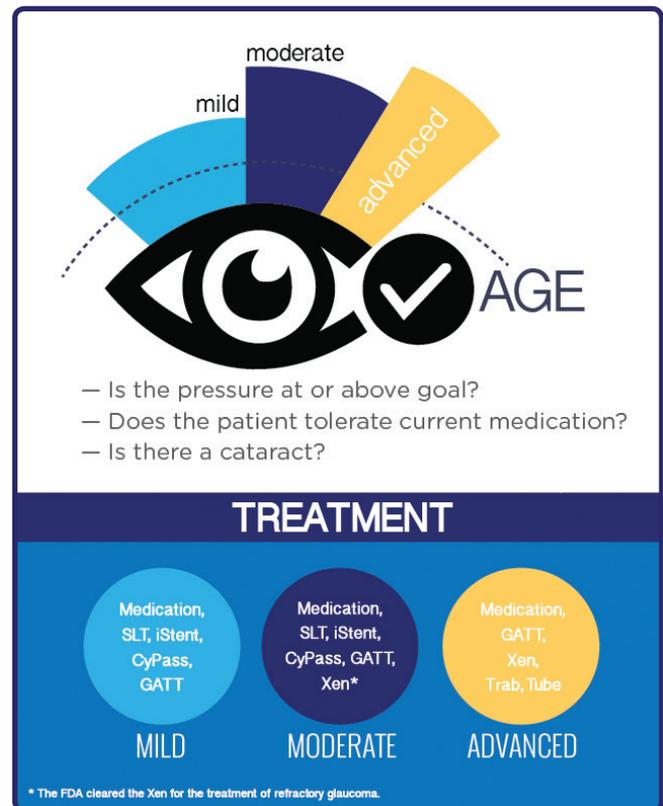
With this information, we can match the treatment safety profile, the level of disease, the efficacy of current treatment, and the patient's tolerance of it. For example, a patient with mild glaucoma whose IOP is at the target level might have problems with the side effects or cost of medication, which means noncompliance is a strong possibility. A more aggressive treatment such as trabeculectomy might be the best choice. Another patient with advanced disease and well-controlled pressure who

tolerates medication could simply stick with the current treatment or might be a good candidate for microinvasive glaucoma surgery (MIGS). In either of these cases, the level of treatment and associated risk would be influenced by the patient's age and lifespan.

When MIGS or other surgery is a treatment option, question number three is important. Some procedures lend themselves to being performed simultaneously with cataract surgery, and certain MIGS devices are approved specifically for use in cataract cases.

THE RIGHT PROCEDURE

First-line therapy for patients with mild or moderate open-angle glaucoma is typically a prostaglandin analogue. Patients with any stage of the disease remain on medical



therapy when their IOP is on target, they tolerate medication, and they have no cataract. When patients cannot achieve the target pressure or cannot tolerate medication, we add a second medication or intervene surgically.

The list of options now includes selective laser trabeculoplasty (SLT), micropulse laser trabeculoplasty, gonioscopy-assisted transluminal trabeculotomy (GATT), ab interno canaloplasty using the iTrack 250A Microcatheter (Ellex), the Trab360 (Sight Sciences), the Kahook Dual Blade (New World Medical), the Trabectome (NeoMedix), the iStent Trabecular Micro-Bypass Stent (Glaukos), the CyPass

Micro-Stent (Alcon), the Xen45 Gel Stent (Allergan), trabeculectomy, and tube shunts. The key is to match each patient to the right procedure.

Mild Disease

Patients with mild disease who tolerate their medications can continue them or, if they are having cataract surgery, have an iStent or CyPass implanted in the angle. If patients' IOP is on target but they do not tolerate their medications, they are candidates for SLT or GATT, regardless of their cataract status. If patients' IOP is uncontrolled,

WATCH IT NOW

In this episode of *Glaucoma Today Journal Club (GTJC)*, Arsham Sheybani, MD, describes his experience with the Xen45 Gel Stent and where the device fits into glaucoma management.



This installment of *Ophthalmology Insider* addresses how new surgical devices will change the management of glaucoma in the future. Moderator Mark Kontos, MD, sits down with Kuldev Singh, MD; Steven Vold, MD; and Arsham Sheybani, MD.



In this episode of GTJC, Nathan Radcliffe, MD, shares advice on how to select the appropriate microinvasive glaucoma surgical procedure for each patient.



Steven Vold, MD, provides insight into new devices and recent acquisitions that will bring microinvasive glaucoma surgery to the next level for physicians and patients in this GTJC episode.





LISTEN UP

In this episode of the podcast *Ophthalmology off the Grid*, Ike Ahmed, MD, and John Berdahl, MD, discuss the evolution of microinvasive glaucoma surgery with moderator Gary Wörtz, MD.
bit.ly/5sheybani0417

SLT or GATT is an easy choice regardless of whether they have a cataract.

Moderate Disease

With moderate glaucoma, the choices get a bit more complex. Among patients without cataracts who do not tolerate their medications, SLT is a reasonable choice if the IOP is controlled. GATT, the iStent, and the CyPass are options as well. To my mind, the Xen is also an option for these patients. The FDA cleared the Xen for the treatment of refractory glaucoma. I believe that, as surgeons gain experience with the device, however, they will begin to use it for less severe disease.

I believe that GATT and the Xen may be best in patients with moderate glaucoma if their IOP is not controlled, because these procedures have the potential to lower pressure and reduce the burden of medication. These procedures also do not need to be performed with cataract surgery, whereas the iStent and CyPass do.

Advanced Disease

Patients with advanced disease require the most aggressive treatment to reach very low target pressures (again, weighed against the factor of age), so we tend to choose surgical intervention. Angle surgery does not seem to



AT A GLANCE

- Glaucoma treatment decisions are complexly influenced by the patient's age and disease stage.
- Also taking into account whether the IOP is at target level, if current medical therapy is tolerable for the patient, and the presence or absence of a cataract allows ophthalmologists to determine how to proceed.

work as well in patients with advanced glaucoma, either because the collector channels are damaged or because the procedure simply cannot lower pressure sufficiently. Trabeculectomy, implantation of a tube shunt, or the subconjunctival route with the Xen works better for these patients.

The Xen, trabeculectomy, and tube shunts are also all options in patients with advanced glaucoma who have cataracts and controlled pressures with tolerated medications. For those who have cataract and uncontrolled IOP and/or intolerated medications, I choose GATT or the Xen. Patients with advanced glaucoma and no cataracts can remain on medication if the agents are working and well tolerated. Otherwise, I perform Xen surgery or GATT.

OTHER CONSIDERATIONS

As we embrace all the new options available to patients with glaucoma, the choices get more complex and more overwhelming for patients. I recommend a few options that I think are reasonable for their situation. This is when their tolerance of risk and surgery becomes a factor. For example, in my experience, GATT can have a higher risk of bleeding than a MIGS device like the iStent, but it also has the potential to achieve a lower pressure. Some patients would rather not face the possibility of a second procedure in the future, whereas others want the lowest-risk option.

Additional considerations are more personal. Caregivers may not be willing to deal with the potential complications of trabeculectomy. Patients who live far away from an eye care provider tend to prefer procedures that do not require multiple visits. Others can only lie flat for surgery for a limited time, so trabeculectomy or a tube shunt may not be a possibility. The Xen can be a good option here, because it may have a faster, more reproducible recovery than trabeculectomy but can drive down pressures just as well (low risk and potentially high reward).

CONCLUSION

There is no magic bullet for glaucoma. We cannot cure the disease, but we can select the best procedure for each patient and even perform multiple procedures over time. Most importantly, expanding options give us a better chance than ever to control IOP and preserve patients' vision. ■

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