FIRST-LINE TREATMENT OPTIONS FOR GLAUCOMA

A review of options and changing practice patterns.

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Since the approval of the first prostaglandin analogue in the 1990s, this class of medication has been the first-line treatment choice for doctors and patients with newly diagnosed glaucoma. Today we have more treatment choices, including new categories of glaucoma medications, safer surgical options, and novel drug-delivery systems. Which first-line treatments we reach for now and in the future will really depend on the individual patient and his or her circumstances. Our main goal with first-line therapy is to prevent the patient from progressing, losing vision, and having to undergo invasive surgeries such as tube shunts and trabeculectomies.

Keep in mind that patients tend to be risk-averse, so the way you discuss their options may strongly affect their treatment choices. It is important to discuss the risks and benefits of each treatment option, from drops to laser to surgical options, but the way you say it can have a significant impact on patient acceptance. For example, if you explain that selective laser trabeculoplasty (SLT) is essentially light, rather than using the word "laser," the patient may feel comfortable with that treatment.

Let's take stock of our options.

THE TRIED-AND-TRUE

When we think of first-line therapy, most optometrists prescribe eye drops because that's what they've been trained to do over the decades, and a prostaglandin analogue is generally the first drop reached for. This drug class generally reduces IOP by 30% or more with a good safety profile.[1] Educating patients that there can be some tolerability issues that go away once use is discontinued can offer some peace of mind. Also, taking the time to discuss the disease state and the importance of using the drop on a daily basis can go a long way to encourage compliance.

Several drops have been approved for reducing IOP in patients with open-angle glaucoma in the past few years. New entries include latanoprostene bunod ophthalmic solution 0.024% (Vyzulta, Bausch + Lomb), netarsudil ophthalmic solution 0.02% (Rhopressa, Aerie Pharmaceuticals), and netarsudil and latanoprost ophthalmic solution 0.02%/0.005% (Rocklatan, Aerie

Pharmaceuticals). These novel additions lower IOP because their components target the trabecular meshwork pathway, which is compromised in glaucoma patients.[2,3]

A NEW TOPIC OF DEBATE

SLT is gaining traction as a first-line option for several reasons. Significantly, SLT on average can be used in place of one topical medication. Just as significantly, the one-time treatment removes the issue of compliance for that one medication.

SLT is also more repeatable than its predecessor, argon laser trabeculoplasty (ALT).[4,5] The LiGHT trial affirmed the safety, efficacy, and cost-effectiveness of SLT as a first-line therapy, demonstrating that a higher percentage of patients achieved target IOP and fewer patients required subsequent glaucoma surgery with SLT than with medical treatment over a 3-year follow up period.[6]

Say you were about to start a patient on his or her first medication. If instead SLT is performed, and its effect lasts, say, for 3 years, you just kept that patient off medications for 3 years. When the effect wears off, there's the option of repeating SLT and maybe keeping the patient off drops even longer.

Similarly, if a patient is already on one drop and you're about to start a second, we know that compliance falls significantly with that second drop, and especially with a third. If SLT can keep the patient off an additional drop for a few years, that's also a win.

Which works better for first-time treatment, eye drops or SLT? Some topical medications can achieve a 25% decrease in IOP.[1] Generally speaking, the literature indicates that the practitioner can expect 20% to 35% IOP lowering for patients when SLT is used as primary therapy. The initial study by Latina et al demonstrated a mean IOP reduction of 23.8% at 26 weeks after a single treatment.[7] The SLT/Med study showed the percentage of IOP reduction 9 to 12 months after treatment was 26.4% for the SLT group and 27.8% in the medical/prostaglandin arm, with the two treatment arms statistically equivalent.[8]

Overall success depends on how it is defined. In the LiGHT trial, 74.2% of patients were drop-free 3 years after primary SLT treatment.[6] SLT has repeatedly been shown to be equivalent to prostaglandins for first-line therapy; the SLT/Med study concludes that SLT should be offered as a first-line treatment for open-angle glaucoma and ocular hypertension, supporting a change in clinical practice.[8]

Certain types of patients might benefit more from one of these newer drugs than from SLT.[6,8] For example, in patients with normal-tension glaucoma, SLT will potentially not lower IOP as much due to the lower pretreatment IOP. The lower the baseline IOP, the less effect we get with SLT.

Ensuring Successful Collaborative Care

Only six states (Oklahoma, Kentucky, Louisiana, Arkansas, Indiana, and Alaska) include SLT in optometric scope of practice, so optometrists practicing in the rest of the United States may question why they would want to send patients out of their practice for SLT when they can put them on an eye drop and keep them in their practice. If SLT is the best option, there is a way to give patients the best care without the fear of losing them once referred. Simply explain to them why SLT is a great option, and that you will share in the care with their surgeon. Then, in your referral letter, along with the patient's OCT and visual field, be sure to spell out that you are referring the patient for SLT, and that you will take care of all follow-up care.

When you hand off the care of a patient to another provider, there must be a level of trust in place and, ideally, an established working relationship between the referring OD and the ophthalmologist performing the procedure. If these don't already exist, it's important to open up the lines of communication and get comfortable working with one another. It's especially important for the optometrist to let the ophthalmologist know that he or she manages glaucoma at a high level and would like the patient returned in order to ensure continuity of care after the procedure.

WHAT ABOUT SURGERY?

Looking to the foreseeable future, first-line treatment options will continue to be prostaglandin analogues and SLT. Nonetheless, eye care providers have surgical options with which to intervene earlier in the disease process. Many of these surgical options carry a much higher safety profile than their predecessors and still effectively lower IOP up to 40%. The reason for considering surgery earlier in the course of disease is to preserve our patients' vision. We don't want to wait until the patient is on maximum medical therapy and has had two SLTs. Instead, we believe it is better to consider surgery before a patient goes on that second or third drop and before his or her compliance decreases.

The relatively new crop of surgical options known collectively as microinvasive glaucoma surgery (MIGS) can be a good bridge for maintaining control of glaucoma until a patient reaches the stage where even more aggressive procedures are needed. A MIGS procedure can be offered as an adjunct to patients with visually significant cataract and to pseudophakes alike to improve their quality of vision and life.

NEW OPTIONS IN TREATMENT

A recently introduced alternative to drops is the biodegradable 10 mcg bimatoprost implant (Durysta, Allergan), approved by the FDA last year for the reduction of IOP in patients with open-angle glaucoma

or ocular hypertension. Durable drug delivery systems such as this aim to lower IOP while avoiding issues with compliance or difficulty with drop administration. These systems could be considered as first-line treatment to bridge the gap to additional treatment down the road in the management of our patients with glaucoma.

The bimatoprost implant releases preservative-free bimatoprost for 4 months, lowering IOP up to 33%, according to the phase 3 ARTEMIS 1 and ARTEMIS 2 studies.[9] The vehicle can remain in the anterior chamber for extended periods of time, but it eventually biodegrades completely. For the time being, the implant is indicated for only a single intracameral injection per eye. Efficacy of IOP lowering has been shown in patients to last several months.[9]

Candidates for the bimatoprost implant include those currently taking a prostaglandin analogue and would prefer not to due to compliance reasons, those with ocular surface disease who need a drop holiday to allow treatment of the ocular surface disease while continuing to keep IOP controlled, those on multiple medications who would like to reduce the number of drugs they are taking, and those due to undergo glaucoma surgery but who still need additional IOP lowering or who require IOP lowering until surgery can be performed.

THE ART OF TREATING GLAUCOMA

Glaucoma isn't a disease in which we make the diagnosis, reach for the same cure-all, administer it to the patient, and go about our day. There's an art to treating and managing the condition, and today we have many options to facilitate that art. We are fortunate to have SLT, novel drugs, and innovative drug delivery options available to us. The variety increases our chances of successfully managing our patients with glaucoma. ■

HYPOTHETICALLY SPEAKING ...

If you found out you had glaucoma today, which treatment option would you choose for yourself, and why?

Dr. Lighthizer: I would choose SLT. It has been clearly shown to be equivalent to eye drops for first-line therapy and it removes the compliance aspect. I don't want to have to remember to use eye drops every day! Unlike previous versions of laser trabeculoplasty, SLT is repeatable. The recent LiGHT trial gives me a lot of confidence that I would be drop-free for at least a few years, and if my pressure creeps up 3 to 5 years from now, I could have another SLT done.

Dr. Schweitzer: SLT. I really like this option for younger patients, and I consider myself young. Glaucoma is a lifelong disease. I know that I likely would need to go on drops or have a drug delivery device implanted at some point, but if I can go several years without medication, then that's how I would want to start.

Dr. Whitley: I would choose SLT. The demonstrated efficacy, improved IOP control, safety profile, and convenience of not taking drops daily makes it an easy decision. What's interesting is that I've posed this question to many audiences over the years and each time, more and more providers choose SLT over drops.

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