

SLT for Compliance

This modality is the only means by which to guarantee patients' adherence to glaucoma treatment.

BY MICHAEL C. STILES, MD

Patients' compliance with prescribed medical therapy is a thorny issue with any chronic disease. Studies of individuals who require long-term drug treatment (eg, for glaucoma, arthritis, or systemic hypertension) reveal that their adherence to prescribed therapy is not nearly as strict as physicians imagine.¹⁻³ Because glaucoma is initially asymptomatic, it can be particularly difficult for ophthalmologists to impress upon patients their need for treatment.

The obstacles to compliance are many. Tsai et al⁴ attempted to create a systematic classification of barriers to compliance in glaucoma. They found that social and environmental factors such as a change in daily routine or travel negatively affected nearly half of the study subjects' adherence to prescribed therapy. Approximately one-third of patients cited factors related to the regimen, including the cost and side effects of the drugs and the complexity of the dosing regimen, as the reason they did not regularly take their medications. For an additional 19% of subjects, the issues were related to themselves (eg, problems with memory or difficulty instilling the drops) or to their physicians (eg, inadequate education about the disease or patients' dissatisfaction with their doctor). Another issue in the study, of course, was that many patients perceive no short-term gain from taking

glaucoma medications; they neither see nor feel better, but their medications may be costly and can produce undesirable side effects.

Some newer agents have superior efficacy at lowering IOP than drugs of the past when taken once daily. The former have undoubtedly improved patients' compliance by simplifying their dosing schedules (Figure 1). Tsai et al,⁴ however, asked subjects if only needing to administer an eye drop once daily would improve their compliance with prescribed therapy. Half said no. Related research⁵ demonstrated just a 70% persistence rate among patients taking prostaglandin analogues, drugs typically instilled once a day. Selective laser trabeculoplasty (SLT) is a means of guaranteeing patients' compliance with glaucoma therapy.

EFFICACY

Prospective studies have shown that SLT as primary therapy can decrease IOP by 30% to 35%,^{6,7} similar to the reduction in pressure achieved with the most effective, current topical medications. After SLT, however, no compliance on the part of the patient is required to continue the treatment's efficacy or prevent complications. At the 7-year follow-up in the Glaucoma Laser Trial,⁸ subjects who first underwent treatment with an argon laser versus medication had a slightly lower IOP, and the status of their visual fields and optic nerve was somewhat better. Although a number of the laser-first patients eventually required medication to maintain control of their IOP, by the end of follow-up, these individuals achieved a 38% reduction in the total number of days requiring medication compared with subjects first treated with medical therapy. In all, undergoing initial treatment with a laser versus medication reduced subjects' dependence on drug therapy. In light of the issues with compliance outlined earlier, these results favor the use of laser therapy earlier in the course of glaucoma treatment.

PERSONAL EXPERIENCE

Despite the results of the Glaucoma Laser Trial, the use of laser therapy as a first-line treatment for glaucoma has not gained widespread acceptance for various reasons, including ophthalmologists' concerns about the modality

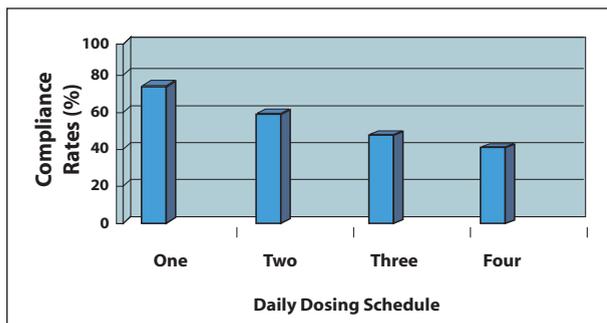
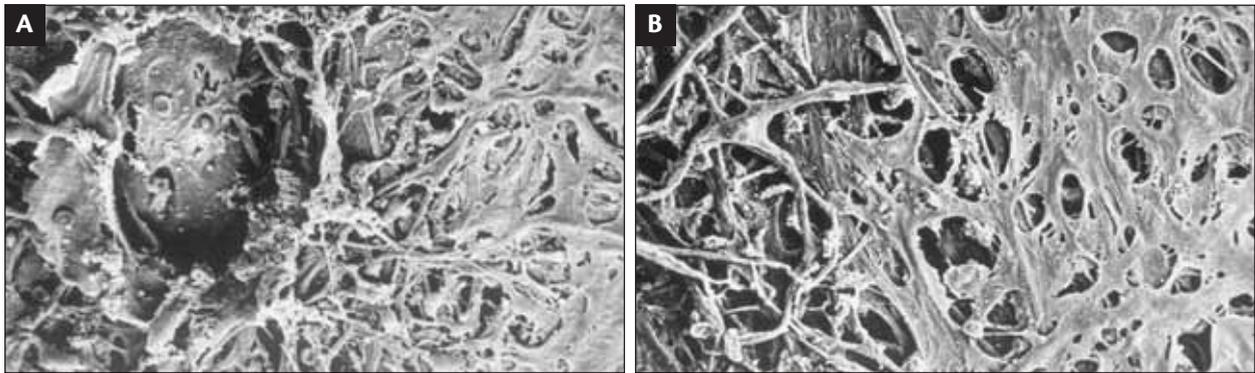


Figure 1. This graph depicts patients' rate of compliance with common dosing schedules. (Data adapted from Cramer JA. Overview of methods to measure and enhance patient compliance. In: Cramer JA, Spilker B, eds. *Patient Compliance in Medical Practice and Clinical Trials*. New York, NY: Raven Press; 1991:3-10.)



(Courtesy of Theresa R. Kramer, MD, and Robert J. Noecker, MD, MBA.)

Figure 2. Scanning electron micrographs were taken of the trabecular meshwork after ALT (A) and after SLT (B).

ty's temporary efficacy in some patients and the advent of newer, more effective glaucoma drugs. Prior to the clearance of SLT, I only performed laser trabeculoplasty in order to avoid filtration surgery or oral glaucoma medication or after the failure of two or more drugs to control a patient's IOP. Over time, my patients and I have grown more comfortable using SLT earlier in the stepwise treatment of glaucoma. Now, I offer the procedure both as initial treatment and when a patient requires more than one therapeutic agent to lower his IOP. I also discuss SLT with anyone who is experiencing side effects from medical therapy, who complains about the cost of medication, or who admits to poor compliance with medical therapy. At present, a majority of my patients choose medication as their first treatment option. Despite an increasing trend toward my patients' choosing SLT as primary therapy, the greatest acceptance of the modality is by those whose IOP is insufficiently controlled on one medication.

Multiple studies have demonstrated an equivalent reduction of IOP by SLT and argon laser trabeculoplasty (ALT).^{9,10} Part of the reason for my use of SLT early in the treatment of glaucoma is that it impresses me as a gentler procedure than ALT. My patients experience less discomfort with SLT than ALT. In a retrospective study,¹¹ Spanish investigators compared the two procedures and reported results that support my evaluation of SLT. At 6 months' follow-up, they found that SLT and ALT lowered IOP similarly but that the former used less energy and caused less inflammation (as measured by a laser flare meter). Additionally, subjects rated their pain as significantly less with SLT than with ALT.

Histologic studies show less structural damage to the trabecular meshwork with SLT compared with ALT¹² (Figure 2). With minimal damage to this tissue, SLT is theoretically repeatable if control of patients' IOP fails in the future. Although no study has yet proven that SLT is effectively repeatable, I find the possibility of re-treating patients makes SLT an attractive alternative to ALT.

SLT has allowed me to avoid medications in some patients whose medical history suggests that they will not comply with prescribed treatment. The procedure has also enabled me to reduce the number of medications for individuals who have trouble with their current drug regimen, even if it is controlling their IOP. Such patients are happy after SLT, because they require fewer medications and experience fewer side effects.

CONCLUSION

It is difficult to determine whether patients are complying with prescribed medical therapy. Many overstate how regularly they administer their eye drops. Primary SLT can eliminate this problem when it achieves the target IOP. Alternatively, the procedure can help patients follow their drug regimen by reducing the number of medications they require. ■

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