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Clinical Trial Results for Selective Laser Trabeculoplasty

Two studies hold important implications for treatment.

In this first study, researchers investigated the safety and efficacy of selective laser trabeculoplasty (SLT) to reduce intraocular pressure (IOP) in patients with open-angle glaucoma whose IOP couldn't be controlled by maximum-tolerated medical therapy or argon laser trabeculoplasty (ALT).

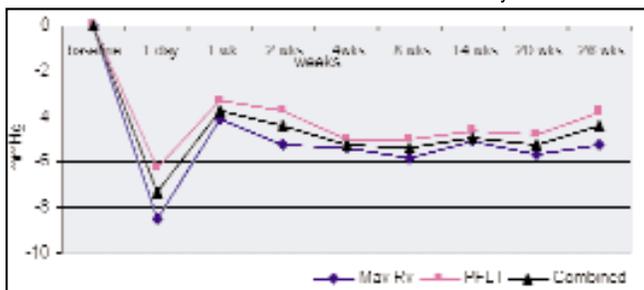
This prospective, multicenter study involved four investigational sites where 120 patients (120 eyes) with uncontrolled open-angle glaucoma were treated with SLT.

The patients underwent SLT using a frequency-doubled, Q-switched, Nd:YAG laser delivering a 532-nm wavelength of laser light at a pulse duration of 3 nanoseconds and a spot size of 400 microns. A total of 50 spots were placed over 180 degrees of the trabecular meshwork (TM) at energy levels ranging from 0.4 to 1.4 mJ/pulse.

Positive responses

At 26 weeks, the mean IOP reduction for the 101 patients who completed the study was 4.4 mm Hg.

Mean Reduction of IOP in 101 SLT-Treated Eyes



SLT-Treated Eyes with a ≥ 3 mm Hg IOP Reduction

	# of eyes (responders)	Pre-op IOP (mm Hg)	Mean IOP change (mm Hg)	% IOP drop
Maximum-tolerated medical therapy	34	25.3	-6.5	-25.3%
Previously failed ALT	37	25.6	-5.7	-22.1%
Combined	71	25.5	-6.0	-23.6%

Subgroup analysis of the 101 patients completing the study revealed reduction in IOP of:

► 5.2 mm Hg in 45 eyes of patients on maximum-tolerated medications

► 3.8 mm Hg in 56 eyes of patients with previously failed ALT.

Researchers observed no relation between the amount of TM pigmentation and the magnitude of IOP decrease. This suggests that response to SLT is less sensitive to trabecular pigmentation than ALT.

The mean number of glaucoma medications decreased from baseline by 1.2 medications for SLT-treated eyes and 0.9 medications for untreated eyes. Researchers found no serious adverse events from the procedure. No peripheral anterior synechiae were attributable to SLT.

This study suggests that SLT appears to be a safe and effective treatment for lowering IOP in patients with uncontrolled open-angle glaucoma.

Ongoing SLT research

A later study, presented at the American Academy of Ophthalmology meeting in November 2001, examined SLT as initial therapy in patients with primary open-angle glaucoma (POAG), as opposed to pseudoexfoliation glaucoma (PXF).

In 26 subjects, researchers studied 19 POAG and 18 PXF eyes. At 30 months, they reported an IOP reduction of 5.7 mm Hg in POAG eyes and 5.3 mm Hg in PXF eyes.

About 77% of POAG eyes didn't require medications or further therapy versus 74% of PXF eyes. Earlier, at 12 to 15 months, about 94% of POAG eyes didn't require medications or further therapy versus 83% of PXF eyes. Researchers reported no significant adverse effects in any patients. **OM**

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Comparing SLT With ALT

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