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Comparing SLT With ALT

Research indicates that SLT appears to be equivalent to ALT in lowering IOP at all time points.

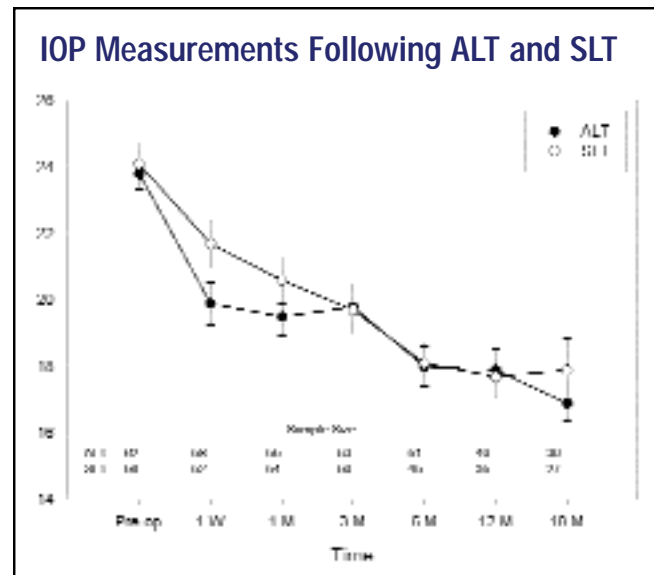
In 1998, Mark A. Latina, M.D., and others reported interim results of the first Phase I/II study of treating patients with a 532-nm, frequency-doubled, Q-switched Nd:YAG laser for selective laser trabeculoplasty (SLT). Some 30 eyes with medically uncontrolled primary open-angle glaucoma (POAG) and 23 eyes with POAG that had previously been treated with argon laser trabeculoplasty (ALT) received SLT. Both groups responded with a similar reduction in intraocular pressure (IOP), about 24% at 26 weeks. Transient pressure elevation of 5 mm Hg or greater was seen in 24% of eyes.

Soon thereafter, researchers began a prospective, randomized clinical trial to study the effectiveness of SLT compared to ALT in lowering IOP in patients with uncontrolled open-angle glaucoma. Patients received either SLT or ALT according to a blocked randomization method.

The study involved 118 eyes at an interim analysis, including 56 in the SLT group and 62 in the ALT group. Some 65 eyes had previously received ALT. Baseline characteristics such as age, sex, diagnosis, past medications and surgery, and angle pigment were similar in both groups. Patients were treated according to a standard protocol and also received apraclonidine immediately preoperatively to blunt postoperative IOP spikes.

Researchers examined patients at about the same time of day pre-laser, and 1 hour, 1 week, and 1, 3, 6, 12 and 18 months post-laser. Each examination consisted of visual acuity, IOP, anterior chamber reaction and gonioscopy with grading of trabecular meshwork pigmentation.

The primary outcome was to measure decrease in IOP at one year. Secondary outcomes involved anterior cham-



ber reaction (cells and flare each graded on a scale from 0 [normal] to 4+ [marked reaction]) and Snellen visual acuity. Researchers also monitored adverse events.

The number of medications used in eyes at each visit was comparable between the two groups. Researchers also tried to keep patients on a constant regimen of medications during the study. An equal number of medication changes occurred in each group.

Results: No difference

At 1 year, results showed no statistically significant difference in IOP between eyes treated with SLT and ALT. (See "Decrease in IOP from baseline and IOP

Decrease in IOP (mm HG) from Baseline				
	1 month n=109	6 months n=96	12 months n=75	18 months n=57
SLT	-3.56	-5.47	-6.49	-6.04
ALT	-4.40	-5.45	-6.03	-7.13
P value	0.29	0.96	0.79	0.36

measurements following ALT and SLT.”)

The following secondary outcomes were noted:

- ▶ Cellular reaction was greater in the SLT versus the ALT group at 1 hour, but not at 1 week
- ▶ No difference in flare at 1 hour
- ▶ No difference in visual acuity at various time points
- ▶ No change in angle pigmentation or development of peripheral anterior synechiae in either group.

Adverse events

Five eyes (3 SLT, 2 ALT) had IOP spikes greater than or equal to 6 mm Hg rise 1 hour after treatment. Eight eyes were retreated with a laser (4 SLT, 4 ALT), and 11 eyes went on to have trabeculectomy surgery (5 SLT, 6 ALT). Finally, two eyes (both from the SLT group) had Ahmed valve procedures.

Preferring SLT

Our research indicates that SLT is equivalent to ALT in lowering IOP at all time points.

From a practical standpoint, SLT is easier to perform in that precise focusing isn't needed, as opposed to the focusing on the anterior trabecular meshwork required in ALT. Patients didn't complain of pain during treatment with either laser.

In sum, given the ease of use, markedly lower energy requirement, selectivity of targeting and preservation of meshwork architecture, SLT is preferred to ALT in lowering IOP for patients with open-angle glaucoma. **OM**

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