



Selective Laser Trabeculoplasty as Secondary Therapy in Patients with Glaucoma: 7 Year Experience

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Introduction

- **Selective Laser Trabeculoplasty (SLT) uses a Q-Switched frequency-doubled (532 nm), low energy Nd:YAG laser, which targets melanocytes in the trabecular meshwork^{1,2}.**
- **SLT treatment induces a biologic response in the trabecular meshwork, which involves the release of cytokines that trigger macrophage recruitment and other changes, leading to reduction in intraocular pressure (IOP).**
- **SLT treats the trabecular meshwork without causing thermal nor coagulative damage to surrounding structures.**

1. Latina MA, et al. Selective targeting of trabecular meshwork cells: in vitro studies of pulsed and CW laser interactions. *Exp Eye Res.* 1995;60:359-372.

2. Latina MA, et al. Q-switched 532-nm Nd:YAG laser trabeculoplasty (selective laser trabeculoplasty): a multicenter, pilot, clinical study. *Ophthalmology.* 1998;105:2082-2090.



Purpose and Methods



➤ Purpose

- To evaluate SLT as secondary therapy, to decrease IOP and medications used (meds), in patients with glaucoma.

➤ Methods

- Retrospective chart review was performed on 1016 eyes from a consecutive case series of 3034 eyes treated with SLT over 7.5 years.
- Two-tailed paired t-test was used to compare maximum pre- and average post-procedure IOP and number of meds.



Results

- Mean follow-up was 520 days.
- Mean IOP decreased 22% from mean of 19.8 mmHg to 15.5 mmHg
- Mean meds decreased by 57% from a mean of 2.3 to 1.0 meds.
- Results were significant with $p < 0.01$



Results

Mean Follow-up	520 Days
Pre-SLT Mean IOP	19.8 mmHg
Post-SLT Mean IOP	15.5 mmHg
% Drop	22%
Pre-SLT Meds	2.3 meds
Post-SLT Meds	1.0 meds
% Drop	57%



Discussion

- **The Ocular Hypertensive Treatment Study and**
- **Early Manifest Glaucoma Trial**
 - **Established efficacy of early and effective treatment to preserve long-term visual function in glaucoma patients^{1,2}.**
- **Our findings build on these studies and suggest SLT as secondary therapy significantly lowered mean IOP 22% in patients with glaucoma (p<0.01).**
- **Our findings also suggest SLT as secondary therapy significantly lowered mean meds 57% in patients with glaucoma (p<0.01).**
- **Further study with controlled clinical trials is indicated.**

1. Kass MA, et al. OHTS. *Arch Ophthalmol*. 2002;120:701-713.

2. Heijl A, et al. EMGT. *Arch Ophthalmol*. 2002;120:1268-1279.



Conclusion

- In this series of over 3,000 eyes followed for more than 7 years:
 - Selective Laser Trabeculoplasty (SLT) as secondary (adjunctive) therapy significantly lowered intraocular pressure (IOP) in patients with glaucoma.
 - Selective Laser Trabeculoplasty (SLT) as secondary (adjunctive) therapy significantly lowered medications used (meds) in patients with glaucoma.

- Results were significant with $p < 0.01$.