



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

## ASCRS 2010

**Lawrence F. Jindra, MD**

Columbia University  
Winthrop University Hospital

**Joseph A. Donnelly**

Albert Einstein College of Medicine  
Yeshiva University

**Elaine M. Miglino**

Floral Park Ophthalmology

- **1<sup>st</sup> author has independently conducted and financed the clinical research study presented herein and received honoraria from Ellex Corporation in the last year.**
- **2<sup>nd</sup> and 3<sup>rd</sup> co-authors have no financial interest in the subject matter of this poster.**



# 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<sup>1,2</sup>.**
- **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 primary therapy, to decrease IOP, in patients with glaucoma.

## ➤ Methods

- Retrospective chart review was performed on 1393 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.



# Results

- Mean follow-up was 757 days.
- Mean IOP decreased 31% from mean of 18.9 mmHg to 13.0 mmHg.
- Results were significant with  $p < 0.01$ .



# Results

<b>Mean Follow-up</b>	<b>757 Days</b>
<b>Pre-SLT Mean IOP</b>	<b>18.9mmHg</b>
<b>Post-SLT Mean IOP</b>	<b>13.0mmHg</b>
<b>% Drop</b>	<b>31%</b>



# Discussion

- **The Glaucoma Laser Trial**
  - Established efficacy of laser trabeculoplasty in lowering IOP in previously untreated glaucoma patients<sup>1</sup>.
- **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<sup>2,3</sup>.
- **Our findings build on these studies and suggest SLT as primary therapy significantly lowered mean IOP 31% in patients with glaucoma (p<0.01).**
- **Further study with controlled clinical trials is indicated.**

1. The GLT Research Group. GLT. *Ophthalmology*. 1990;97:1403-1413.

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

3. 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 primary (initial) therapy significantly lowered intraocular pressure (IOP) in patients with glaucoma.
  
- Results were significant with  $p < 0.01$ .