



Long-term Efficacy of Selective Laser Trabeculoplasty in Patients With Glaucoma

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Disclosure

- Speaker has independently conducted and financed clinical research studies
- Speaker was recruited by Ellex to present data contained in this presentation
- Speaker serves as a speaker for Lumenis
- Speaker receives no royalty payments, commission fees, nor stock options



Learning Objectives

- New Treatment Paradigms
- Independent Clinical Research
- Long term Efficacy



Objective and Methods

➤ Objective

- To examine the long-term effectiveness of SLT as primary, secondary, and repeat treatment in patients with glaucoma (presented at ASCRS 2002 - 08, ARVO 2005 - 07, AAO 2004 - 08)

➤ Methods

- In a consecutive case series, five-year retrospective chart review was performed on 2056 eyes from patients treated with SLT between January 2002 and February 2007



Statistical Analysis

➤ Statistics:

- Two-tailed paired t -tests compared
- Maximum pre- and post-procedure IOP
- Number of pre- and post-procedure glaucoma medications (meds)



Background

- Method of action is thought to be selective photothermolysis¹
- There is no thermal or coagulative damage to surrounding tissue^{1,2}
- Only pigmented cells are targeted^{1,2} – no peripheral anterior synechiae

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.



Data Set: Primary

- 879 eyes were treated with SLT as primary treatment for glaucoma
- Diagnostic and treatment criteria from GLT, OHTS, EMGT
- Pre- and post- procedure IOP were evaluated

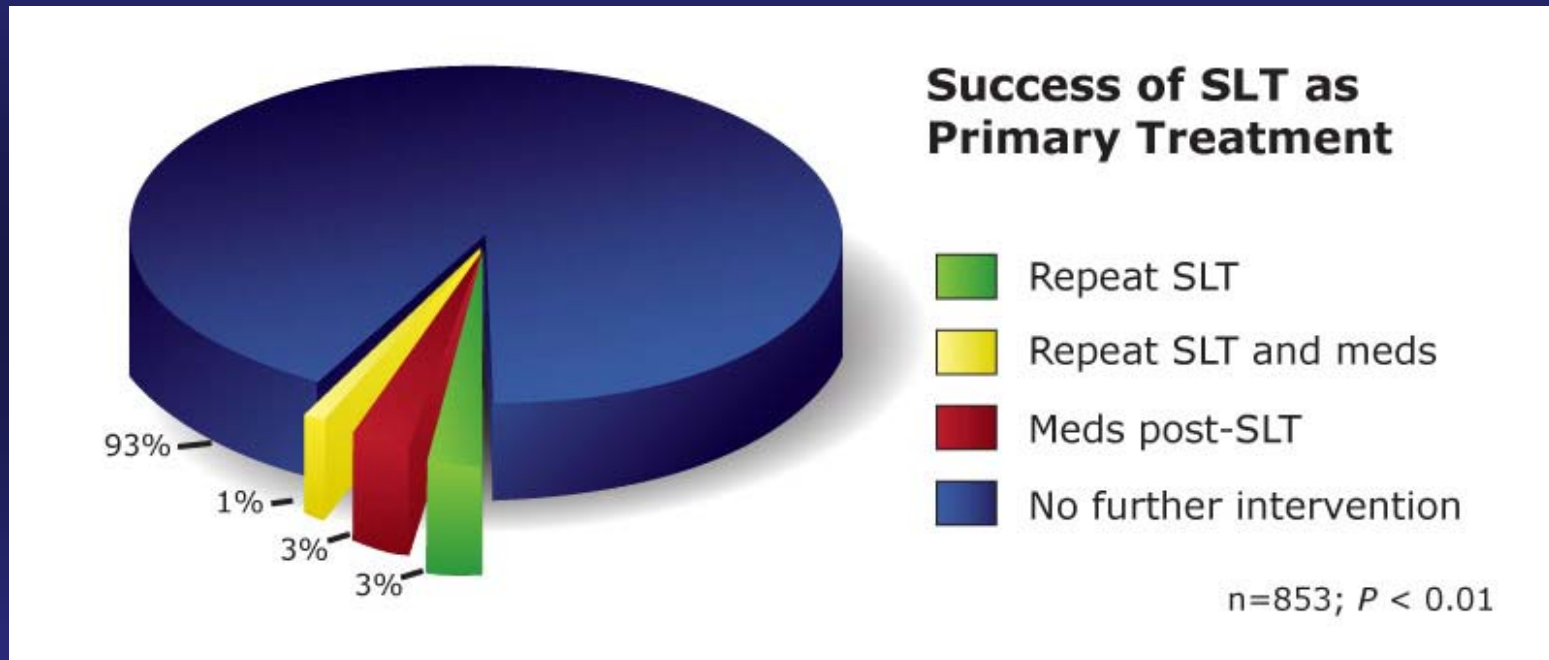


Results: Primary

- IOP decreased from a mean of 19.1 mm Hg \pm 4.0 (range: 12-36) to 13.2 mm Hg \pm 3.3 (range: 6-32) after primary treatment with SLT over a five-year period
- This represented a 31% mean decrease in IOP or a mean change of 5.9 mm Hg \pm 3.2 (99% CI: 5.7-6.9)
- Results were significant with $P < 0.01$



Results: Primary





Results: Primary

- Lifetable Analysis over five years: failure defined as repeat SLT or meds for IOP control
- Cumulative Probability of Success was 93%

0 – 1 yr 93%

1 – 2 yr 98%

2 – 3 yr 89%

3 – 4 yr 90%

4 – 5 yr 90%

- Results were significant with $P < 0.01$



Data Set: Secondary

- 760 eyes were treated with SLT as secondary treatment for glaucoma
- Patients referred for IOP control and / or reduction in side effects
- Pre- and post- procedure IOP and number of pre- and post-procedure meds were evaluated



Results: Secondary

- IOP decreased from mean of 20.0 mm Hg \pm 6.4 (range: 7-48) to 15.9 mm Hg \pm 5.5 (range: 5-42) after secondary treatment with SLT over a five-year period
- This represented a 21% mean decrease in IOP or a mean change of 4.1 mm Hg \pm 6.2 (99% CI: 3.8-6.3)
- Results were significant with $P < 0.01$

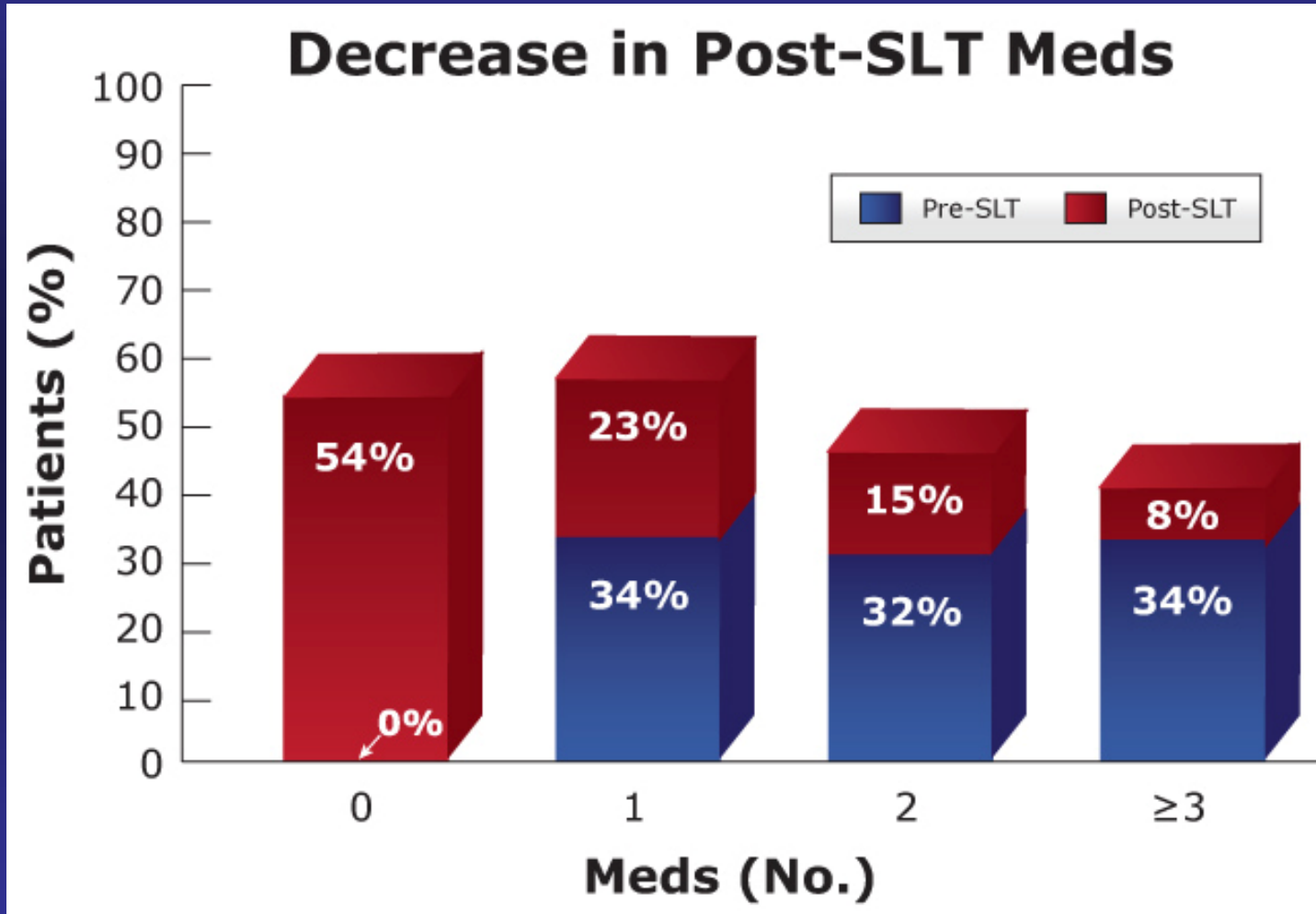


Results: Secondary

- Number of meds decreased from a mean of 2.3 \pm 0.9 (range: 1-6) to 1.3 \pm 1.0 (range: 0-4) after secondary treatment with SLT
- This represented a 44% mean reduction in the number of meds or a mean change of 1.0 med \pm 0.9 (99% CI: 0.9-1.2) over a five-year period
- Results were significant with $P < 0.01$



Results: Secondary





Results: Secondary

- Lifetable Analysis over five years: failure defined as repeat SLT for IOP or meds control
- Cumulative Probability of Success was 37%

0 – 1 yr 31%

1 – 2 yr 48%

2 – 3 yr 53%

3 – 4 yr 38%

4 – 5 yr 40%

- Results were significant with $P < 0.01$



Data Set: Repeat

- 376 eyes out of 1634 eyes initially treated with SLT required repeat treatment
- Patients referred for IOP control and / or reduction in side effects
- Results were significant with $P < 0.01$



Results: Repeat

- These data represent a repeat rate of
 - 11% of eyes treated over three years
 - 18% of eyes treated over four years
 - 24% of eyes treated over five years
- Results were significant with $P < 0.01$



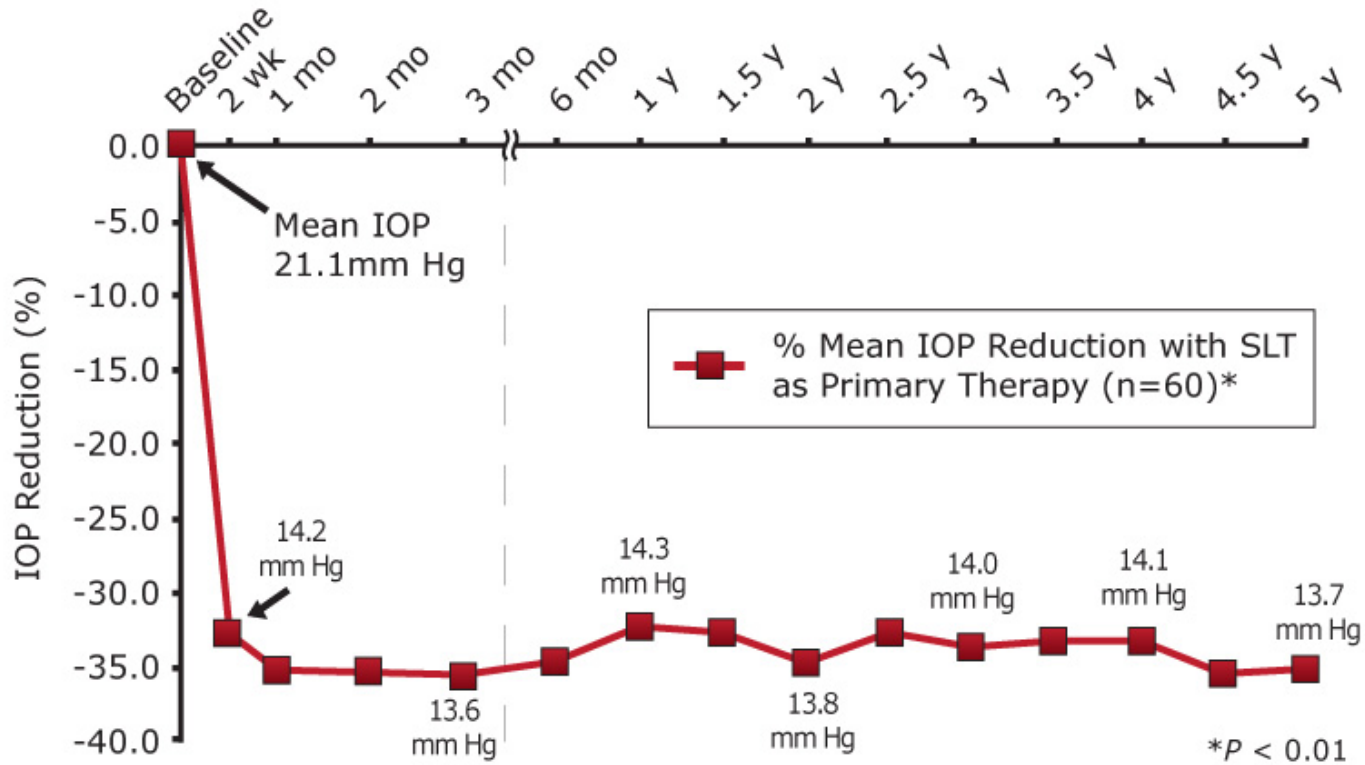
Results: Longevity

- 60 eyes treated with SLT as primary therapy were followed for 6 years
- IOP was retrospectively recorded at various time points up to 6 years



Results: Longevity

SLT as Primary Therapy Maintained Significant Mean IOP Reductions Over 5 Years*





Summary

- In this clinical series, treatment with Selective Laser Trabeculoplasty :
 - Significantly lowered intraocular pressure
 - Significantly lowered number of meds
 - Significantly effective repeat rate



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