



Correlation of Gender and Age to Efficacy of Selective Laser Trabeculoplasty as Primary or Secondary Treatment in Patients with Glaucoma

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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 study the relationship between gender, among different ages, and decrease in IOP after treatment with SLT, as primary or secondary therapy in patients with glaucoma.

➤ Methods

- Retrospective chart review was performed on 2299 eyes from a consecutive case series of 3034 eyes treated with SLT over 7.5 years.
- Paired t-test at 95% confidence interval was used to determine statistical significance.
- Eyes were stratified by primary and secondary therapy, and then sub-stratified by gender (male/female) and then age (less than 60, 60-80, greater than 80).
- Relative decrease in IOP was measured as the difference between maximum pre-SLT IOP and average of three post-SLT IOP (2 weeks, 2 months, 6 months), divided by maximum pre-SLT IOP.



Results (Primary / Secondary)

Mean relative IOP Decrease (%)

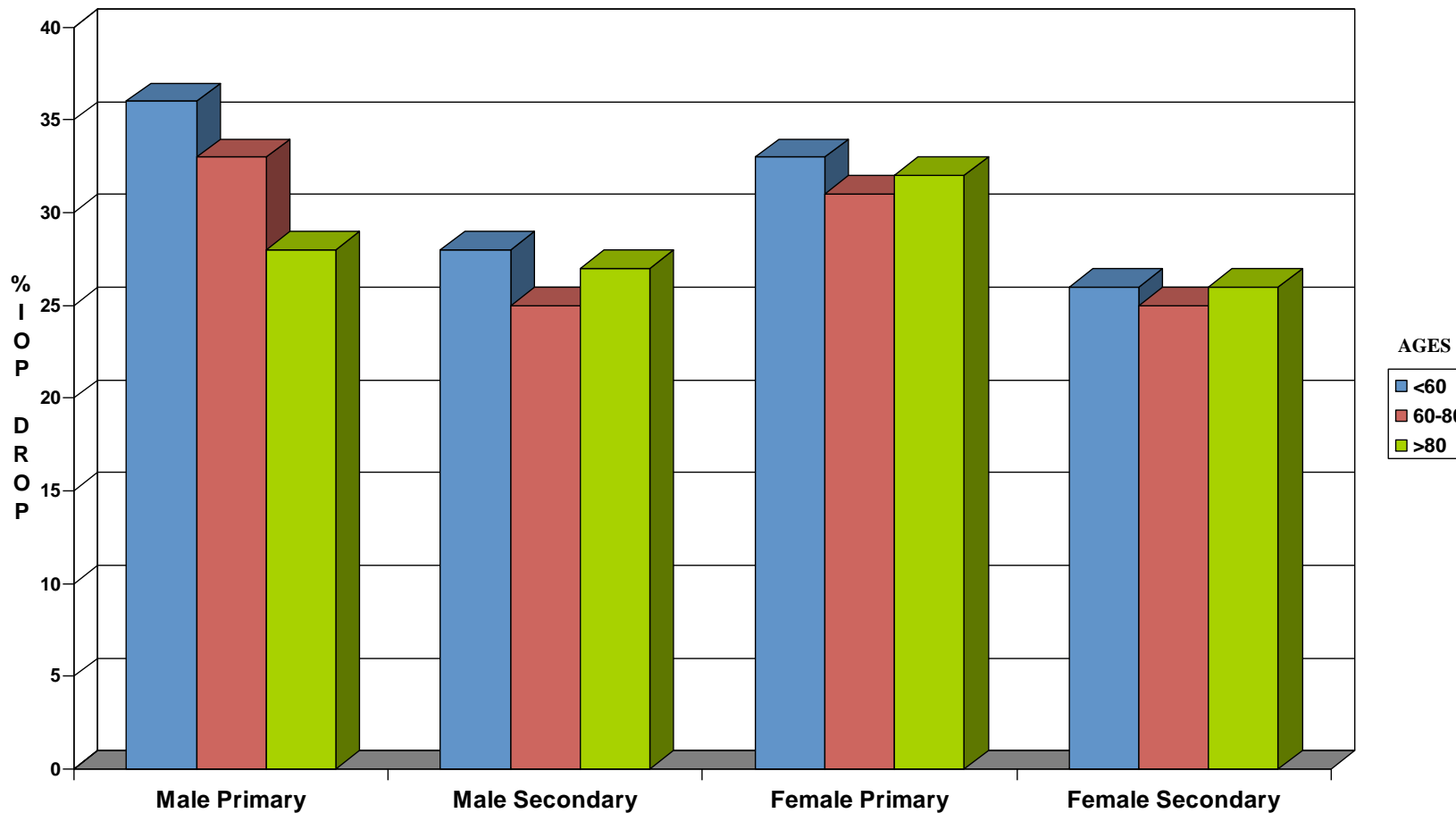
Ages	Male Primary	Male Secondary	Female Primary	Female Secondary
<60	36	28	33	26
60-80	33	25	31	25
>80	28	27	32	26

- There was no significant difference in mean relative IOP decrease, between gender groups and among age subgroups, for either primary or secondary therapy ($p > 0.05$).
- For either gender and for each age subgroup, the primary SLT group had a greater mean relative IOP decrease than the secondary SLT group ($p < 0.05$).



Results (Primary / Secondary)

Mean Relative IOP Decrease (%)





Discussion

- **The Glaucoma Laser Trial**
 - Established efficacy of laser trabeculoplasty in lowering IOP in previously untreated glaucoma patients¹
- **The Ocular Hypertensive Treatment Study and**
- **The Early Manifest Glaucoma Trial**
 - Established efficacy of early and effective treatment to preserve long-term visual function in glaucoma patients^{2,3}
- **Our findings build on these studies and suggest between gender groups and among age subgroups, there was no significant difference in mean relative IOP decrease, for either primary SLT or secondary SLT treatment ($p > 0.05$).**
- **For either gender and for each age subgroup, the primary SLT group suggested a greater mean relative IOP decrease than the secondary SLT group ($p < 0.05$).**

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, showed NO significant effect of gender, among each age subgroup, to lower intraocular pressure (IOP) in patients with glaucoma.
 - Selective Laser Trabeculoplasty (SLT) as secondary (adjunctive) therapy showed NO significant effect of gender, among each age subgroup, to lower intraocular pressure (IOP) in patients with glaucoma.
- Results were significant with $p < 0.01$.