



# **Where does SLT fit in Glaucoma Management ?**

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# **Ideal Rx for Glaucoma**

- ❖ Should offer sufficient reduction in IOP
- ❖ Should provide reduction on long term basis
- ❖ Should be associated with minimal IOP fluctuation
- ❖ Should be independent of the compliance factor
- ❖ Should offer tolerable systemic & local side effects or be devoid of S/E.
- ❖ Should be economically sound

# SLT

## The New Laser Trabeculoplasty

- ❖ Where does it fit in the treatment paradigm?

Adjunctive Rx or Replacement therapy or First line Rx

- ❖ Long term results of SLT ??
- ❖ Is it a repeatable treatment ??
- ❖ Effect of SLT on IOP Fluctuations!

# **Selective Laser Trabeculoplasty**

Retrospective analysis of case notes of all the patients treated from "Jan 2000 to Dec 2005"

## **5 years of SLT experience (UK)**

- ❖ Long-term results
- ❖ Efficacy of re-treatment

## **Distribution : Diagnosis (n = 571)**

<b>Diagnosis</b>	<b>Primary Rx</b>	<b>Adjunctive Rx</b>	<b>Total No. of Eyes Rxed</b>
<b>OAG</b>	<b>101</b>	<b>134</b>	<b>235</b>
<b>OHT</b>	<b>128</b>	<b>64</b>	<b>192</b>
<b>NTG</b>	<b>45</b>	<b>33</b>	<b>78</b>
<b>Total</b>	<b>274</b>	<b>231</b>	<b>505 eyes</b>

**66 Eyes – Primary group 22 and Adjunctive group 44 – Not analysed**

# **Distribution : Treatment**

## **Primary SLT:**

274 eyes (54%) received SLT as primary treatment of glaucoma - Primary group

## **Adjunctive SLT:**

231 eyes (46%) received SLT as Adjunctive / Replacement treatment - Secondary group

# Results: Primary Group (OAG & OHT)

- ❖ The primary group included data from 229 eyes (251)
- ❖ The IOP ↓↓ from a mean of 27.8 mmHg +/- 3.9 mmHg to 19.0 mmHg +/- 4.7 mmHg.
- ❖ This represents a 32 % ↓↓ in IOP or 8.8 mmHg (CI: 95%)
- ❖ The results were significant with a p-value < 0.001.
- ❖ Mean Follow up: 45 months

# Primary SLT & IOP Drop

Clinically & Statistically Significant, p value <0.001, CI 95%

**OAG & OHT**

32 % IOP Reduction

F/U 45 months

# Results: Secondary Group (OAG & OHT)

- ❖ The secondary group included data from **198 eyes (242)**.
- ❖ The IOP ↓↓ from a mean of **26.0 mmHg +/- 3.9 mmHg** to **16.8 mmHg +/- 2.8 mmHg**.
- ❖ This represents a **33% ↓↓** in IOP or **8.8 mmHg** (CI 95%).
- ❖ The results were significant with a p-value **< 0.001**.
- ❖ Mean Follow up: **51 months**.

# Secondary SLT & IOP Drop

Clinically & Statistically Significant, p value <0.001, CI 95%

OAG & OHT

33% IOP Reduction

F/U 51 months

# **Survival Curve – OAG & OHT**

## **Success Criteria 20% drop**

**25-30% NR**

**OAG & OHT**

**N = 427 eyes**

**50% Responders @ 5 yrs**

# Re-treatment results

Re-treatment:

Enhancement : Treating virgin TM following initial 180° Rx

Repeat Treatment : Retreating the TM that has been treated previously

# Results: Retreatment with SLT

The retreatment group includes data from **110** eyes.

- ❖ Enhancement – 56 eyes - IOP ↓↓ from 26 to 16 mmHg. This represents a 38% decrease in IOP.  
Mean Follow up: 24.7 months
- ❖ Repeat – 54 eyes - IOP ↓↓ from 25.3 to 17.8 mmHg. This represents a 29 % decrease in IOP.  
Mean Follow up: 19.4 months
- ❖ The results were significant with a p-value < 0.001.

# **IOP Drop with Enhancement**

**Eyes: 56**

**Initial Rx: Inferior half of TM**

**NR: 10 Eyes**

**Eyes : 56**

**Enhancement: Superior half of TM**

**NR: 7 Eyes**

**4/10 NR to 1<sup>st</sup> Rx were NR again**

**2 F @ 6/12, 2 F @ 12/12, 2 R @ 24/12**

# **IOP Drop with Repeat SLT**

**Eyes: 54 (Following 360° Rx)**

**NR: 19**

**Eyes: 54 ReRx 360° Rx**

**NR: 14 Eyes**

**12/19 NR again – 63%**

**5/19 F @ 6/12 – 26%**

Non Responder to 360° Rx

**Consider Medical Rx  
or Surgery**

# SLT

## **The New Laser Trabeculoplasty**

- ❖ Where does it fit in the treatment paradigm?

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- ❖ Long term results of SLT
- ❖ Is it a repeatable treatment
- ❖ **Effect of SLT on IOP Fluctuations!**

# **Effect of Selective Laser Trabeculoplasty and Prostaglandins on Daytime Tension Curve**

## **Introduction: -**

- ❖ The measurement of intraocular pressure (IOP) is essential in the diagnosis and management of open-angle glaucoma.
- ❖ A single measurement may or may not reflect what the IOP is at other times of the day or night.

## **Study Design: -**

- ❖ Prospective, Randomized, Masked Clinical trial

## **Purpose: -**

- ❖ Evaluate the effect of SLT on **daytime tension curve**
- ❖ Compare effect of SLT and Latanoprost on daytime IOP fluctuations.

# Effect of Selective Laser Trabeculoplasty and Prostaglandins on Daytime Tension Curve

## Material and Methods: -

- ❖ All newly diagnosed patients with OAG & OHT requiring treatment were randomized and recruited into one of the two arms of the study.
- ❖ 40 patients recruited into two groups-  
Group 1 - Laser treatment i.e. SLT  
Group 2 - Medical Treatment i.e. Latanoprost 0.005% nocte
- ❖ Chief Investigator (MN) and patients were aware of mode of treatment but the other two investigators were masked.
- ❖ Pre treatment and 3/12 post treatment daytime tension curve was plotted – 8am, 11am, 2pm and 6pm.
- ❖ Pre treatment IOP was recorded
- ❖ Post Treatment IOP recorded at Day 3, Week 1, Month 1 and Month 4

# Effect of Selective Laser Trabeculoplasty and Prostaglandins on Daytime Tension Curve

Results: -

- ❖ It's a feasibility study - 40 patients recruited 19 female and 21 male.
- ❖ SLT or Xalatan demonstrated clinically & statistically significant IOP reduction – SLT 28.7% & Xalatan 29.6%.
- ❖ But no significant difference noticed between 2 groups

Treatment Group	Pre Rx IOP (mmHg)	IOP Day 3 (mmHg)	IOP Week 1 (mmHg)	IOP Month 1 (mmHg)	IOP Month 4 (mmHg)
SLT P value	27.8	20.35 <0.001	22.53 <0.001	22.87 <0.001	19.8(28%) <0.001
Xalatan P value	24.3	18.63 <0.001	18.17 <0.001	17.31 <0.001	17.1(29%) <0.001

# Effect of SLT on Daytime Tension Curve

Pre SLT IOP Fluctuation – 6.4mmHg Post SLT IOP Fluctuation – 3.2 mmHg p <0.001

# Effect of PGs on Daytime Tension Curve

Pre PGs IOP Fluctuation – 6.4mmHg Post PGs IOP Fluctuation – 2.1 mmHg p <0.001

# IOP Fluctuations Pre & Post Rx

Pre SLT IOP Fluctuation – 6.4mmHg    Post SLT IOP Fluctuation – 3.2 mmHg     $p < 0.001$

Pre PGs IOP Fluctuation – 6.4mmHg    Post PGs IOP Fluctuation – 2.1 mmHg     $p < 0.001$

# Effect of Selective Laser Trabeculoplasty and Prostaglandins on Daytime Tension Curve

## Discussion: -

- ❖ IOP is a dynamic parameter, i.e. IOP values and measurements fluctuate during the 24 hours.
- ❖ The pattern of daytime tension curve was similar for cases treated by SLT and Xalatan, but **the cases treated with SLT seem to have a higher baseline IOP.**
- ❖ Both groups demonstrated statistically significant ( $<0.001$ ) reduction in IOP fluctuations following treatment.
- ❖ **Selective Laser Trabeculoplasty” decreases peak pressure and daily pressure fluctuations.** SLT offers great promise for glaucoma patients. Using this laser therapy, we may be able to help patients avoid surgery and reduce their dependence on eye drops.

**Further research is required to evaluate the effect of Selective Laser Trabeculoplasty on 24 hours IOP fluctuations**

# **Ideal Rx for Glaucoma**

No treatment for Glaucoma has a better risk/benefit ratio than

**Laser Trabeculoplasty**

# Take home message:

- ❖ No Rx available is 100% effective (SLT 70-75%).
- ❖ No treatment for Glaucoma has a better risk/benefit ratio than LT.
- ❖ Effect of SLT does wear off with time like ALT.
- ❖ BUT unlike ALT, SLT is a repeatable procedure
- ❖ No need to worry about side effects unlike anti-glaucoma drops or their contraindications
- ❖ Role of SLT is not only to reduce IOP but also to
  - a) improve compliance
  - b) improve patient's QOL
- ❖ ? Better treatment option for OHT patients.

# Current Profile

1. Medical therapy
2. Maximally tolerated medical therapy
3. Laser trabeculoplasty
4. Surgical filtering

# My Current Profile

1. A new number one
2. Medical therapy
3. Maximally tolerated medical therapy

**Laser trabeculoplasty (SLT)**

4. Surgical filtering

**I do not depend on my patients anymore**



# **Thank you**

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