



# **“SLT as First Line Therapy & Long Term Results”**

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No Financial Interests

# Ideal Rx for Glaucoma

- ❖ Offers sufficient reduction in IOP
- ❖ Provides IOP reduction on long term basis
- ❖ Associated with minimal IOP fluctuations
- ❖ Independent of the compliance factor
- ❖ Tolerable systemic & local side effects or be devoid of S/E.
- ❖ Economically sound

**Question is**

Do we have an ideal treatment in our armamentarium?

# **Ideal Rx for Glaucoma**

How does Medications, Laser and Surgery compare to each other?

No treatment for Glaucoma has a better Risk / Benefit ratio than

**Laser Trabeculoplasty**

# Selective Laser Trabeculoplasty

- ❖ Where does it fit in the treatment paradigm?  
First Line / Adjunctive Rx / Replacement therapy?
- ❖ Long term results of SLT ??
- ❖ Is it a repeatable treatment ??

# Selective Laser Trabeculoplasty

Retrospective review of case notes of all the patients treated from Jan 2000

## 5 years of SLT experience (UK)

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

# Distribution : Diagnosis

(n = 722 eyes of 451 patients)

<b>Diagnosis</b>	<b>Primary Rx</b>	<b>Adjunctive/ Replacement Therapy</b>	<b>Total No. of Eyes Rxed</b>
<b>OAG</b>	<b>151</b>	<b>210</b>	<b>361 (50%)</b>
<b>OHT</b>	<b>184</b>	<b>99</b>	<b>283 (39%)</b>
<b>NTG</b>	<b>45</b>	<b>33</b>	<b>78 (11%)</b>
<b>Total</b>	<b>380 (52%)</b>	<b>342 (48%)</b>	<b>722 eyes</b>

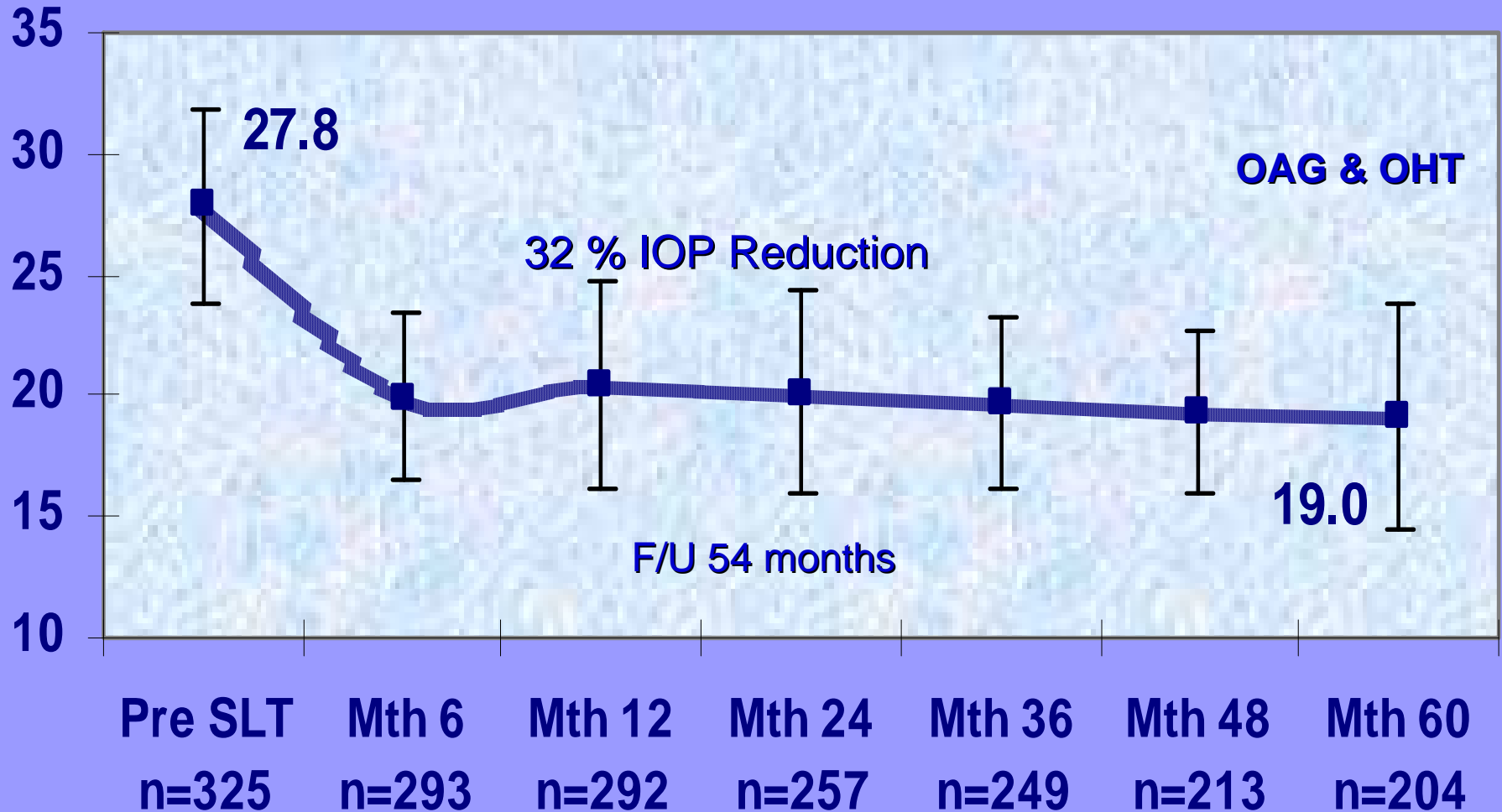
Primary group 25 and Adjunctive group 38 – Not analysed

# Results: Primary Group (OAG & OHT)

- ❖ The primary group included data from 335 eyes (380)
- ❖ 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: 54 months (Range 6 - 72 months)

# Primary SLT & IOP Drop

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

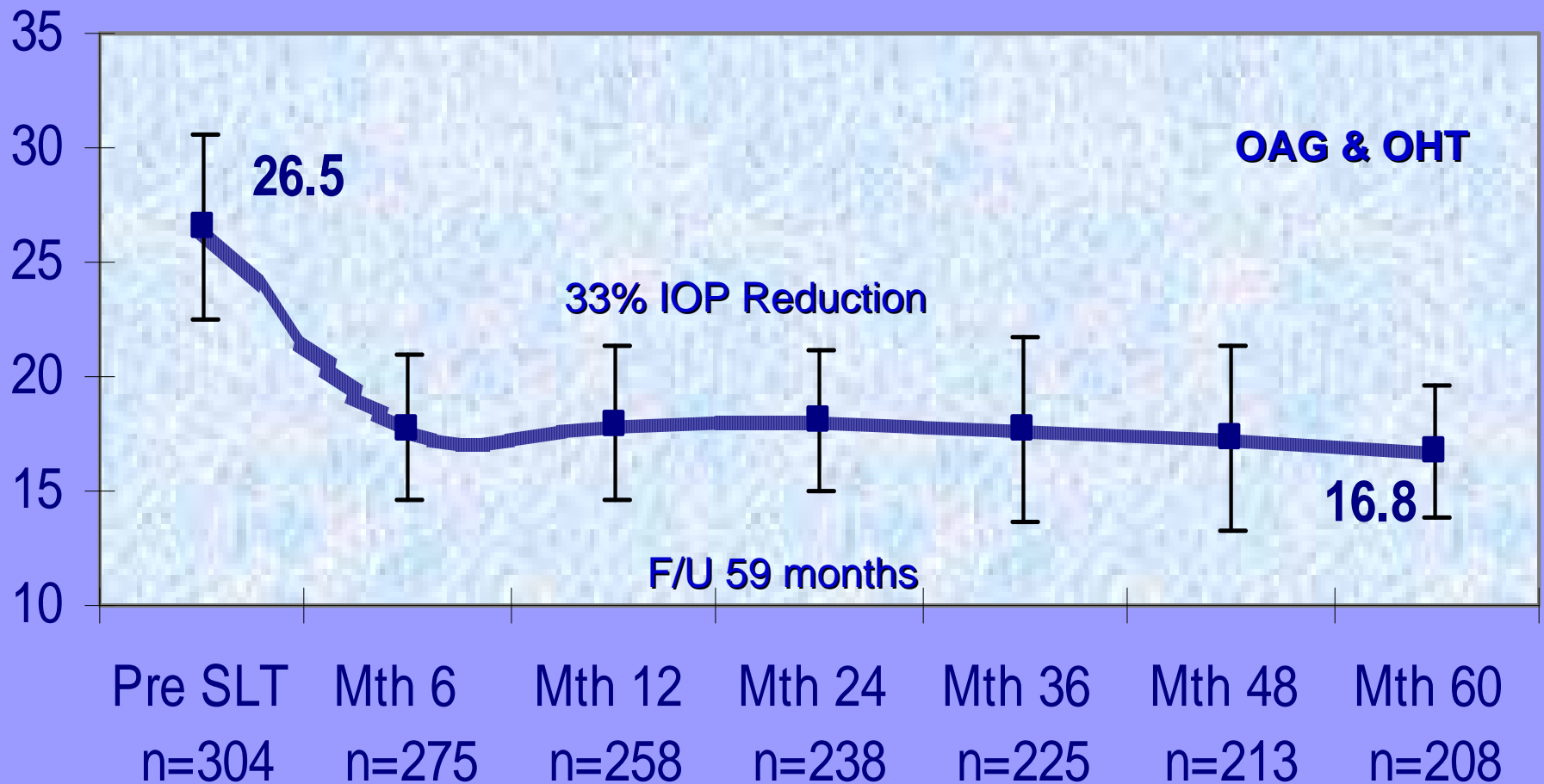


# Results: Secondary Group (OAG & OHT)

- ❖ The secondary group included data from **309 eyes (342)**.
- ❖ The IOP ↓↓ from a mean of **26.5 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: **59 months** (Range 6 - 84 months).

# Secondary SLT & IOP Drop

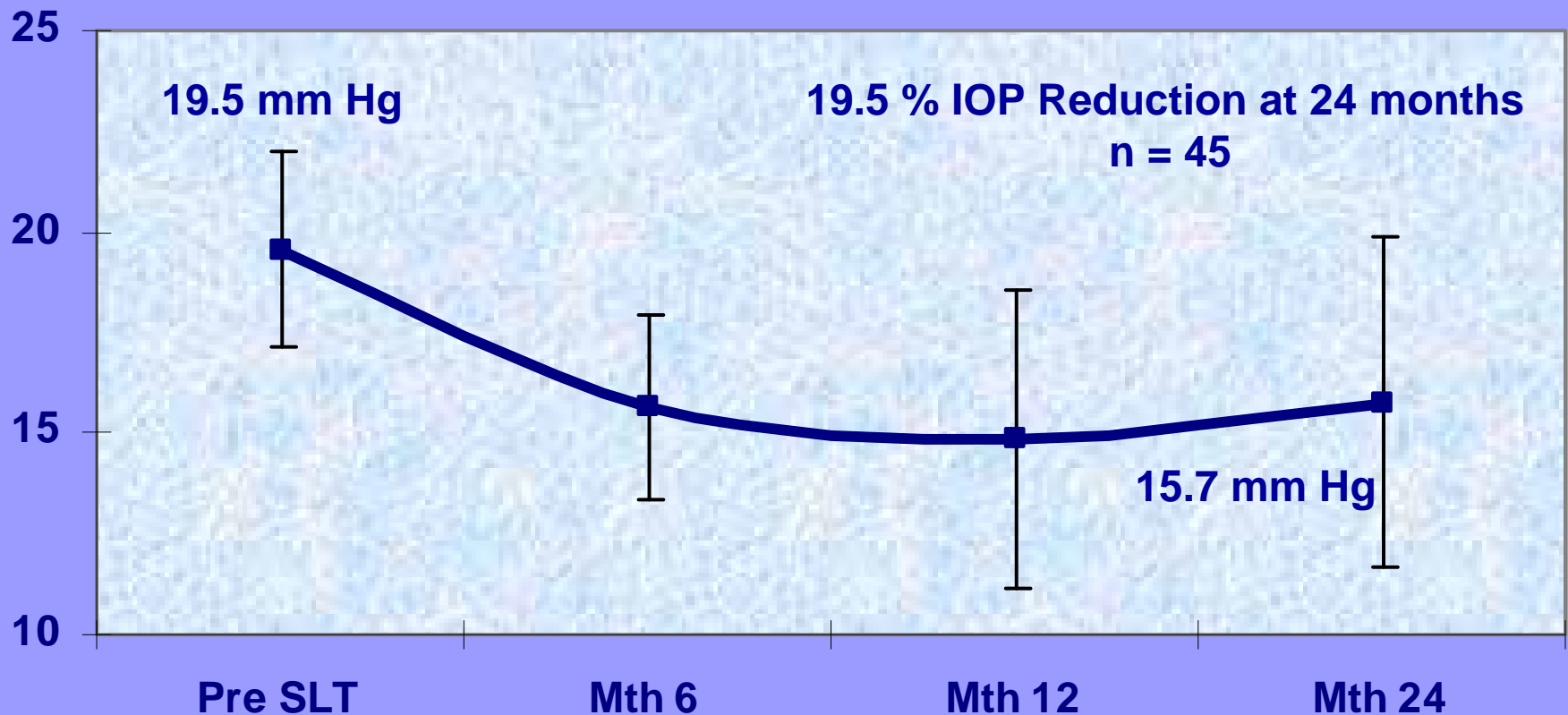
Clinically & Statistically Significant, p value <0.001, CI 95%



# Primary SLT & IOP Drop in NTG

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

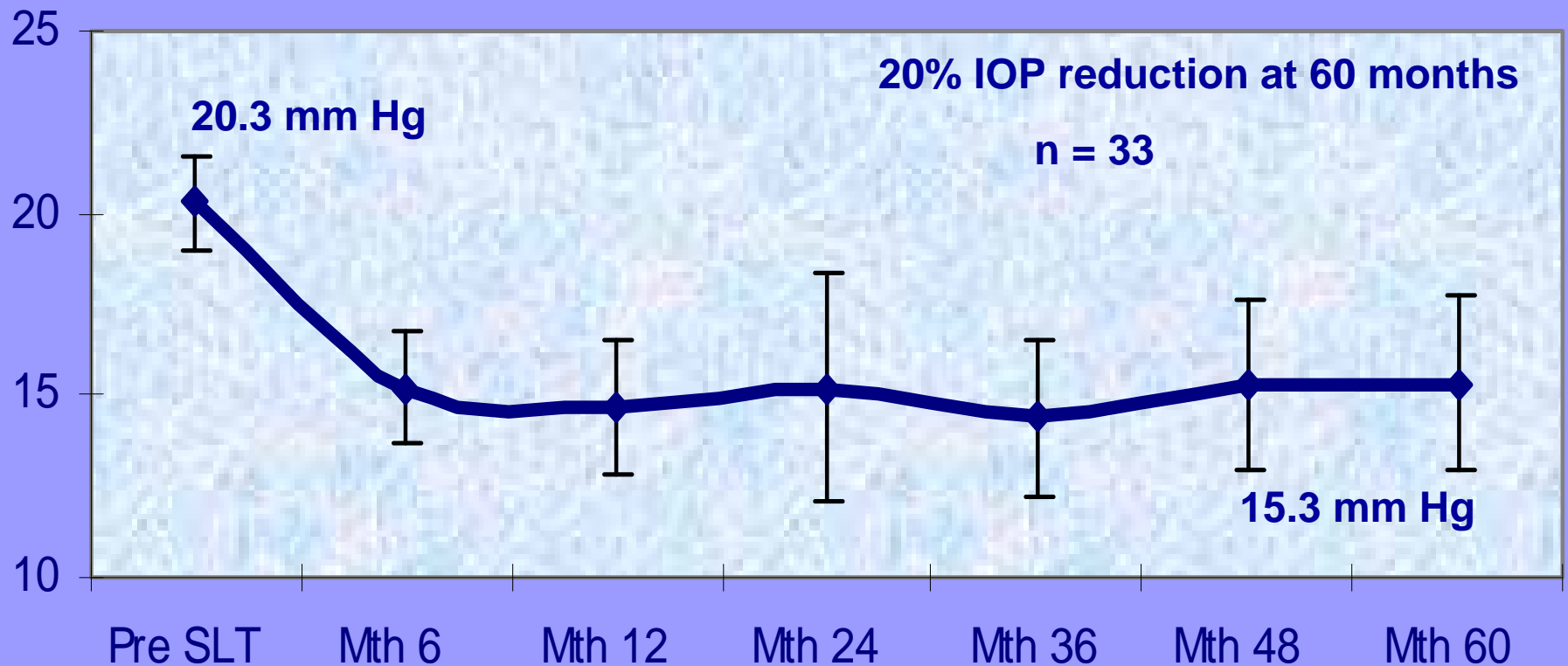
NTG - Primary SLT



# Secondary SLT & IOP Drop

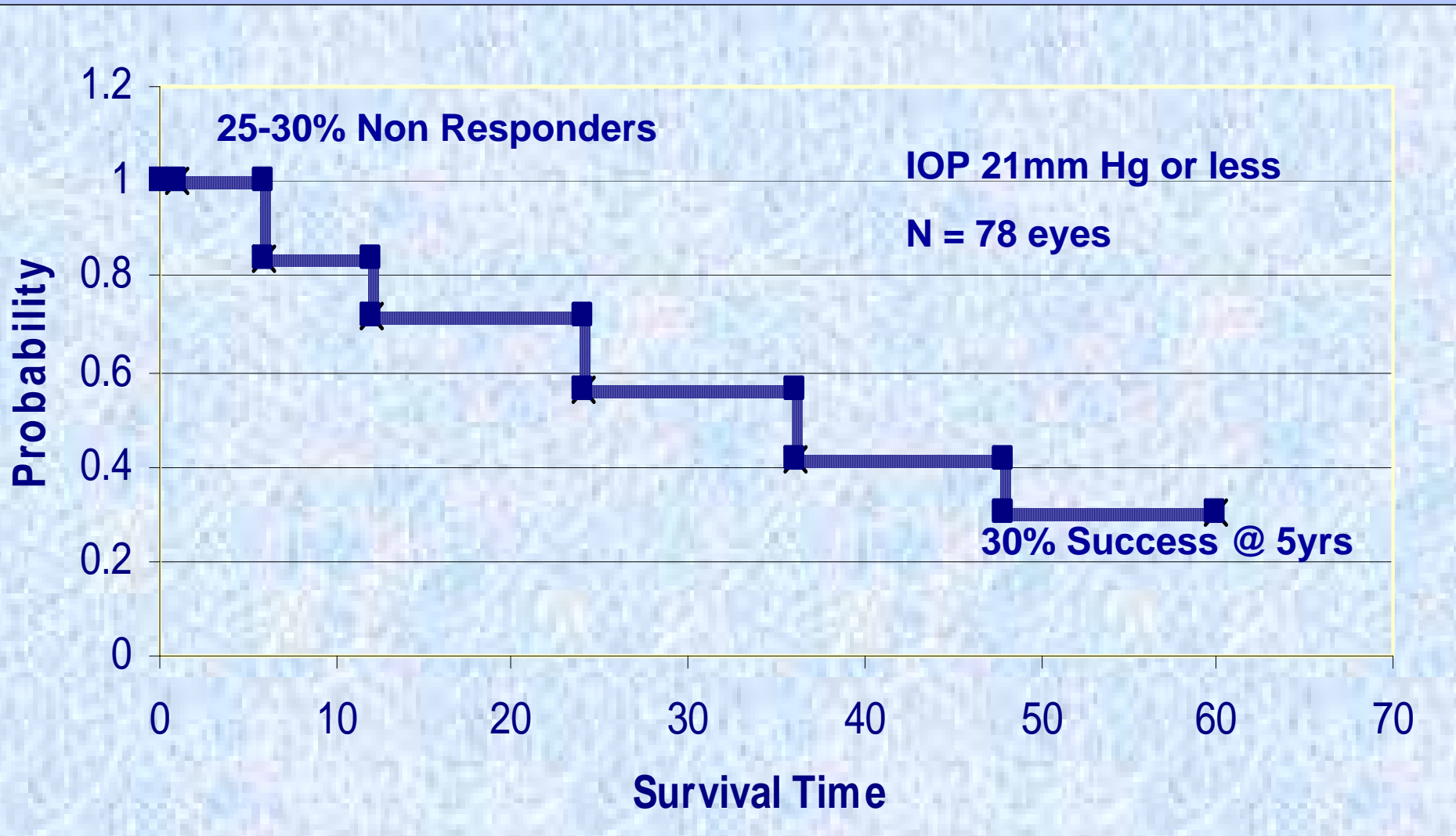
Clinically & Statistically Significant, p value <0.001, CI 95%

## NTG - Secondary SLT



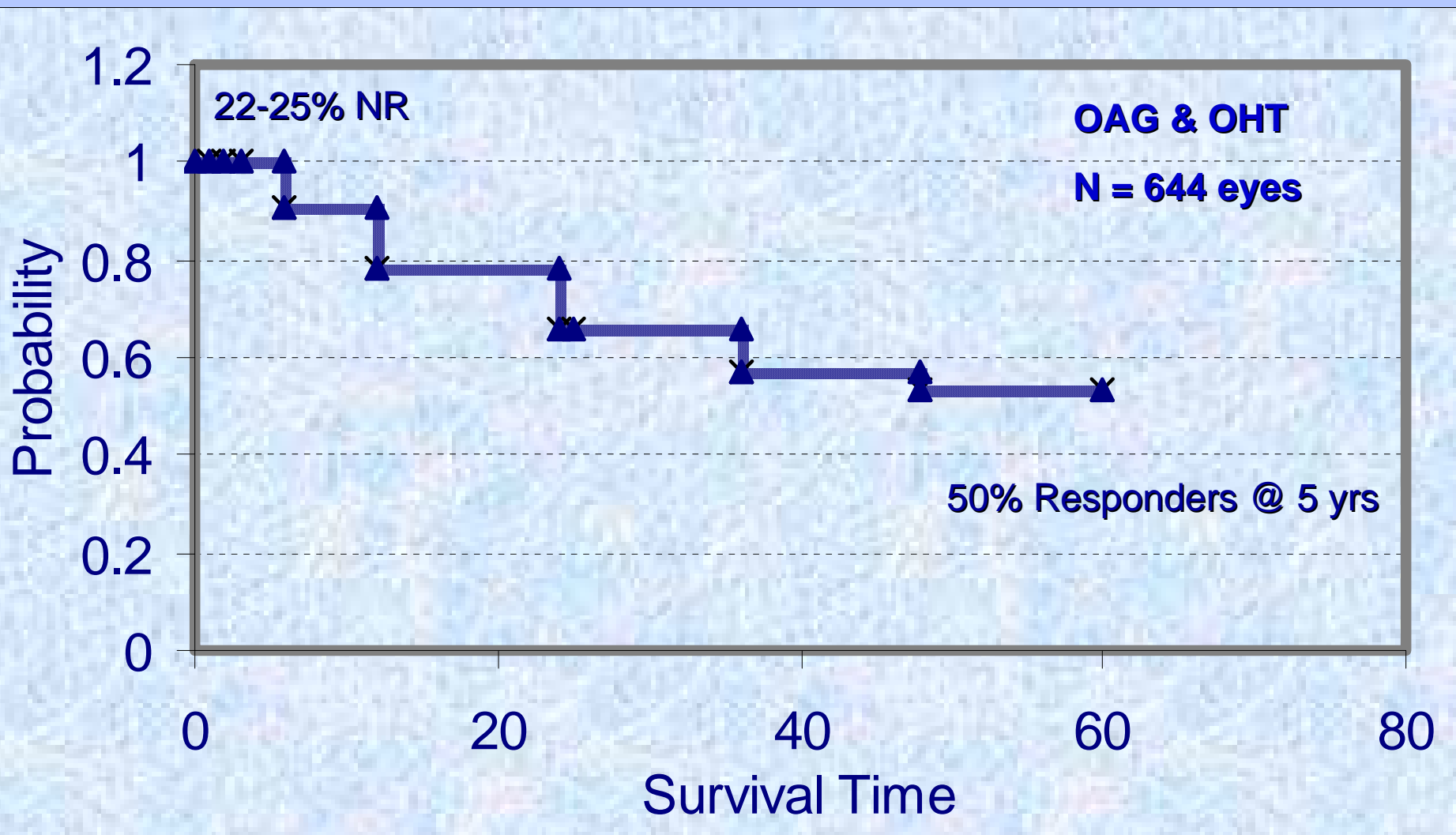
# Survival Curve – NTG

## Success Criteria 20% drop



# Survival Curve – OAG & OHT

Success Criteria 20% drop



# Re-treatment results

Re-treatment:

Enhancement : Treating 180° virgin TM following initial 180° Rx

Repeat Treatment : Retreating the TM that has been treated previously

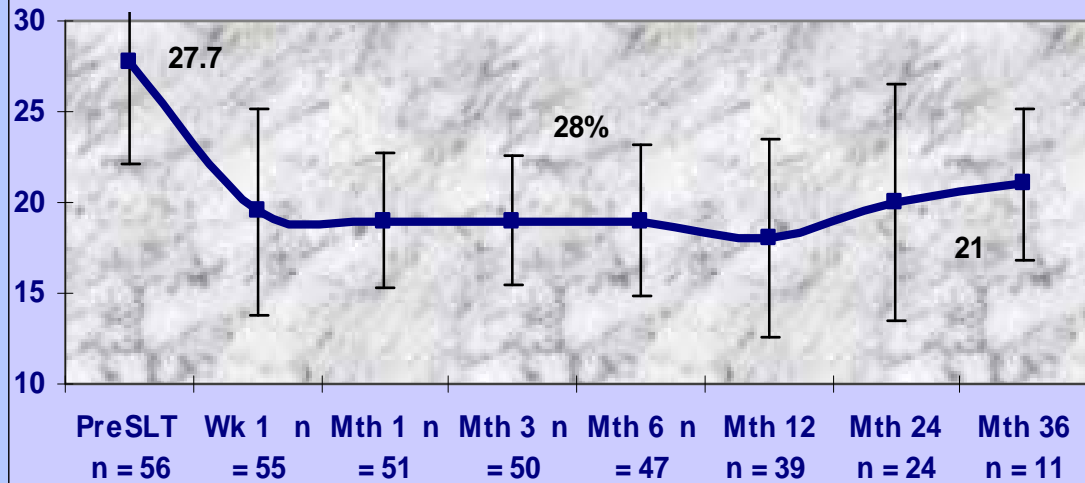
# Results: Retreatment with SLT

The retreatment group includes data from 110 eyes.

- ❖ **Enhancement – 56 eyes - IOP ↓↓ from 26 to 20 mmHg. This represents a 23% decrease in IOP.**  
Mean Follow up: 24.7 months
- ❖ **Repeat – 54 eyes - IOP ↓↓ from 25.3 to 18.3 mmHg. This represents a 25 % decrease in IOP.**  
Mean Follow up: 19.4 months
- ❖ **The results were significant with a p-value < 0.001.**

# IOP Drop with Enhancement

SLT 1st Rx



Eyes: 66 Rxed 56 analysed

Initial Rx: Inferior half of TM

NR: 10 Eyes

40% NR again

Eyes : 56

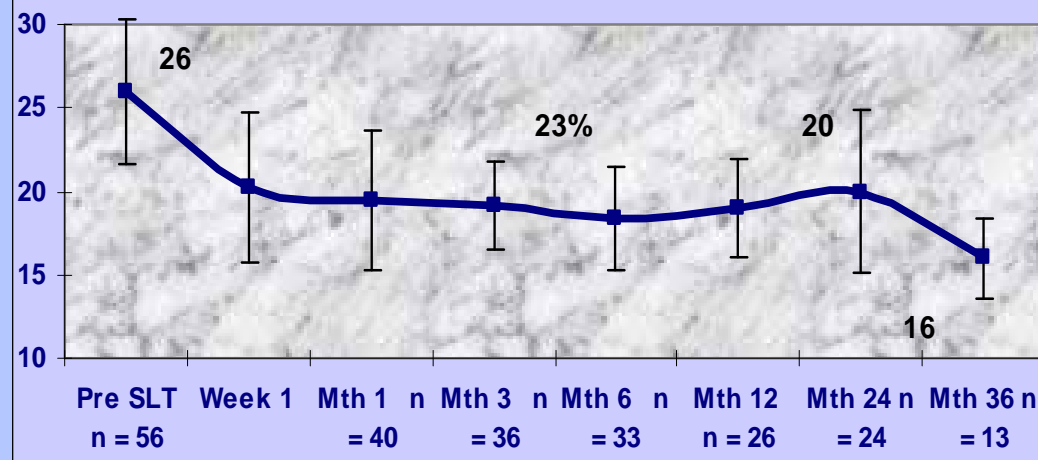
Enhancement: Superior half of TM

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

SLT Enhancement



# IOP Drop with Repeat SLT

Eyes: 54 (Following 360° Rx)

NR: 19

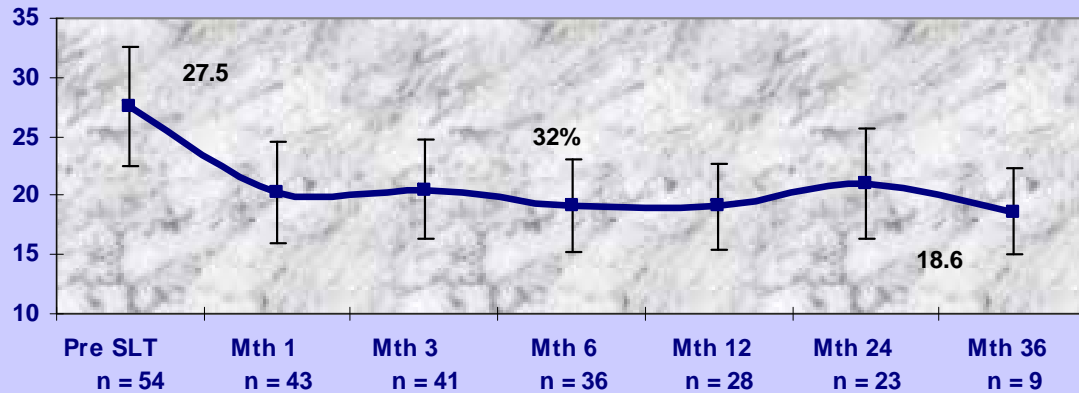
Eyes: 54 ReRx 360° Rx

NR: 14 Eyes

12/19 NR again – 63%

5/19 F @ 6/12 – 26%

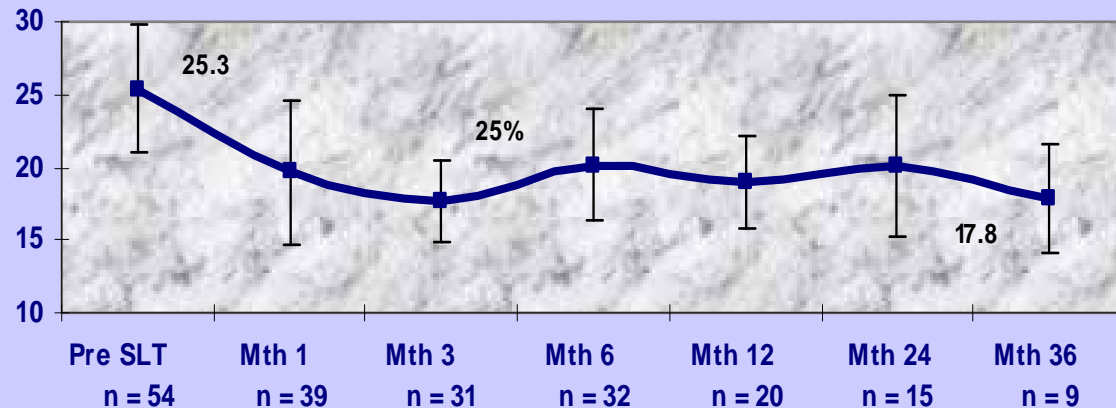
SLT Initial Rx



Non Responder to 360° Rx

Consider Medical Rx or Surgery

SLT ReRx/Redo



# Predictors for Success

- Baseline IOP
- Treatment Area 180 vs 360 degree Rx
- Patient Selection: OAG, Pigmentary, PEX glaucoma, Angle recession glaucomas, Narrow angles
- Poorly compliant to medical therapy
  - Rx completely washed off prior to SLT ??
  - ?? On outflow drugs
  - Still on Medical Rx
- Previous failed ALT / SLT
  - Primary Rx works better than Retreatment

# Correlation: Baseline IOP and IOP Drop

Baseline IOP	Year 1	Year 2	Year 3	Year 4	Year 5
< 21 mmHg	- 4.35	- 3.0	- 4.3	- 4.5	-3.8 20%
22 – 25 mmHg	- 5.8	- 5.4	- 6.4	- 5.6	-4.8 22%
26 – 30 mmHg	- 7.7	- 7.7	- 8.6	- 9.7	-9.8 30%
31 – 35 mmHg	- 10.4	- 10.0	- 13.0	- 10.7	-13.7 35-40%
> 36 mmHg	- 16.0	- 19.2	- 22.7	- 24.6	-20.6 40-50%

# Success is proportional to Rx Area

Treatment	>20% IOP Reduction	>30% IOP Reduction
90 degree	12 eyes (34%)	4 eyes (11%)
180 degree	32 eyes (65%)	21 eyes (48%)
360 degree	36 eyes (82%)	26 eyes (59%)

It is a **Dose Response**, 360 better than 180. Bilateral Rx better than unilateral

- Response to Rx is better
- Response Rate increases
- Rx Effect lasts longer.

*Nagar et al: BJO 2005;89 1413-1417*

# Predictors for Success

- Baseline IOP
- Treatment Area 180 vs 360 degree Rx
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  - ?? On outflow drugs
  - Still on Medical Rx

# EGS Guidelines

## Wash off medical Rx prior to SLT

- ❖ Beta blockers 2-5 weeks
- ❖ Sympathomimetics 2 weeks
- ❖ Direct acting miotics 1-3 days
- ❖ Indirect acting miotics 1 month
- ❖ Topical CAI 1 week
- ❖ Oral CAI 1 week
- ❖ Prostaglandins 4-6 weeks

# Selective Laser Trabeculoplasty

- ❖ Where does it fit in the treatment paradigm?

First line Rx / Adjunctive Rx / Replacement therapy

- ❖ Long term results of SLT - **Good**
- ❖ Is it a repeatable treatment - **Yes**

# Current Profile (New pts)

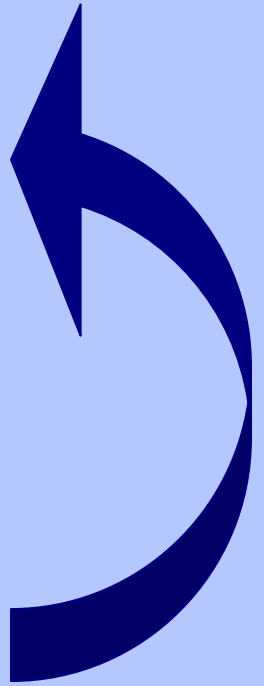
1. Medical therapy
2. Maximally tolerated medical therapy
3. Laser trabeculoplasty
4. Surgical filtering

# My Current Profile (New pts)

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

Laser trabeculoplasty (SLT)

4. Surgical filtering



# My Current Profile (pts on Rx)

Medical therapy / Maximally tolerated medical therapy

- Wash medical treatment
- Laser trabeculoplasty
- Restart medical Rx if required
- Surgical filtering

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