Selective Laser Trabeculoplasty in the Management of Steroid-Induced Elevation of Intraocular Pressure

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Introduction

Around 18-36% of patients who receive steroid therapy, regardless of route, develop an elevation in intraocular pressure (IOP). This is thought to relate to trabecular meshwork dysfunction.

Selective laser trabeculoplasty (SLT) has been postulated to modulate trabecular meshwork function, possibly counteracting the effects of steroid therapy at this level. A few small case series have shown the potential benefit of SLT in the management of uncontrolled IOP related to steroid therapy.

Aim

To assess the efficacy of SLT in the acute management of steroid-induced elevation of IOP which is unresponsive to maximally-tolerated medical therapy.

Methods

Inclusion criteria

- Recent/current steroid therapy regardless of route (intravitreal, oral, topical)
- Uncontrolled IOP on maximally-tolerated medical therapy

Outcomes

- Extent of IOP-lowering effect
- Duration of treatment response
- Change in number of IOP-lowering medications
- SLT safety profile

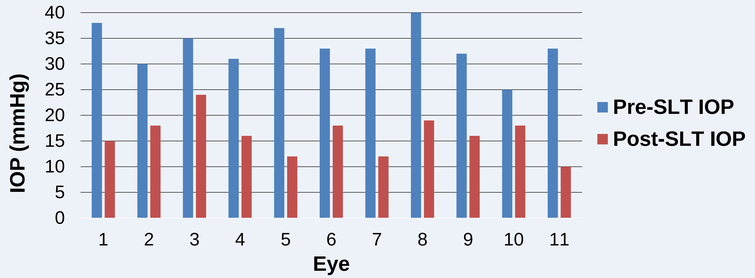
Results – Patient Population

11 eyes of 9 patients were included

- 7 (63.7%) received or were receiving intravitreal steroid
- 3 (27.3%) received or were receiving oral steroid
- 1 (9.1%) received or were receiving topical steroid
- Mean age of 61 ± 13 (range 42-81 years)
- 5 (45.4%) eyes had a pre-existing diagnosis of OHT or glaucoma
- 2 (18.2%) eyes had a history of acute anterior uveitis

Results – Primary Outcome

Extent of IOP-lowering effect



IOP pre-SLT	33 ± 4 mmHg (25-40mmHg)
IOP at first clinic visit post-SLT	16 ± 4 mmHg (10-24mmHg)
First clinic post-SLT	19 ± 9 days (9-35 days)
Reduction in IOP	51 ± 14% (28-70%)

Outcome data described as mean ± s.d. (range)

Results – Secondary Outcomes

Duration of treatment response

- 10 (90.1%) eyes had an IOP within target range at their most recent follow-up (100 ± 60 days, range: 9-188 days)
- SLT was repeated in 1 eye with IOP returning to within target range
- 7 (63.6%) eyes received further/ongoing steroid therapy

Number of IOP-lowering medications

	Pre-SLT	Post-SLT
Mean number of medications	3.6 ± 1.3 (range 0-5)	3.0 ± 1.1 (range 0-4)
Oral Diamox	3	0
Topical Iopidine	6	0

SLT safety profile

- There were no SLT-related adverse events

Conclusion

In this cohort of patients with steroid response and uncontrolled IOP, SLT was:

- Effective in acutely lowering IOP, reducing the need for surgical intervention, oral Diamox and topical Iopidine
- Effective for a sustained period, despite ongoing steroid therapy
- Repeatable
- Safe