Laser Cyclophotocoagulation for Treatment of Refractory Glaucoma Secondary to Uveitic Glaucoma: Long-Term Follow-Up

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Introduction

- Cyclodiode laser has fallen out of favour for uveiticic glaucoma due to the potential for exacerbating inflammation in an already inflamed eye.
- This increased risk of complications includes hypotony, with long-term rates reported between 10-30%[1] as well as the development of band keratopathy and phthisis bulbi[1,2].

Aim

Primary Outcome: Assess Long term rates of hypotony, band keratopathy and phtisis bubli

Secondary Outcome: Surgical Success, glaucoma re-operations, intraocular pressure(IOP), and further glaucoma procedures

Methodology

Design: Retrospective, Multi-surgeon, single-centre Study

Inclusion Criteria: All Cyclodiodes performed on patients diagnosed with uveitis between 1/2/2013- 1/1/2023

Population: 25 eyes of 27 patients

Follow Up: Average Follow up(SD): 5.97 years (3.4)

Follow up Range: 0.53-10.8 years

9 eyes of 8 patients had cyclodiode laser previously

10 eyes of 9 patients had glaucoma operation previously

Results

Baseline Characteristics

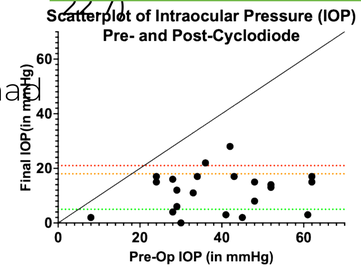
Baseline Demographic Data	
	N(%)
Patients	25
Study Eye	27
Left	12 (44.4)
Female	11 (40.7)
Age (y)	
Mean (SD)	49.7(20.9)
Median (Range)	54 (14-83)
Ethnicity	
Asian	6(22.2)
Afro-Carribean	9(33.3)
White	9(33.3)
Unknown/Unspecified	2(7.4)
Mixed	1(3.7)

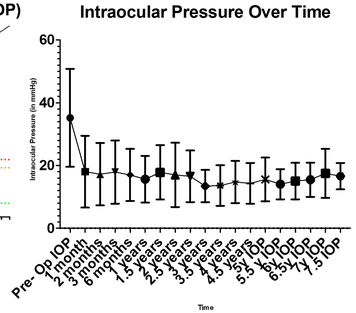
Type of Uveitis (n=27 eyes) (%)	
Fuchs heterochromic iridocyclitis	2 (7.4)
Glaucomatocyclitic crises (Posner-Schlossman syndrome)	1 (3.7)
Panuveitis	5 (18.5)
Herpetic Uveitis	2 (7.4)
Traumatic Iritis	1 (3.7)
Uveitis–Glaucoma–Hyphema (UGH) syndrome	1 (3.7)
Keratouveitis Atopic Herpetic	3 (11.1) 1 2
Anterior Uveitis	6 (22.2)
Acanthamoeba Keratitis with Scleritis	1 (3.7)
Tuberculosis Granulomatous Uveitis	1 (3.7)
JIA	2 (7.4)
Endogenous Endophthalmitis	1 (3.7)

Cyclodiode Energy Setting

- Range 6.4-78.8 J
- Average: 36.0 J (+/- 22.7)

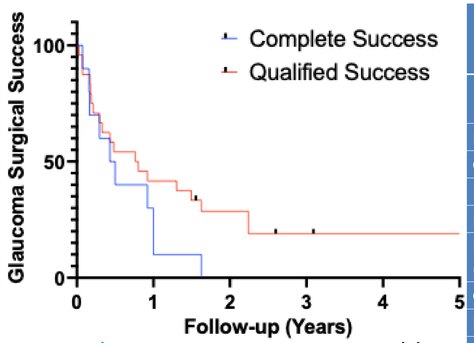
Intra-ocular Pressure





% IOP reduction at final follow up	
IOP≤18	92.6%
IOP≤21	92.6%

Surgical Success



Complete success occurred in 0% of cases

Qualified success occurred in 18.5% of cases

Failure occurred in 81.6% of cases

Failure

Average Time to Failure 11.0 months ± 8.7 months

Range: 0.33-26.9 months

8 (29.6%) eyes required **further Cyclodiode laser**

9 (33.3%) eyes required **further glaucoma lowering procedure**

Patient-level Characteristics, (n=22) (%)	
Further Glaucoma Procedure:	8(36.3)
Cyclodiode	4
Phaco+ iStent	1
Tube	1
Trabeculotomy (GATT)	1
HIFU	1
Inadequate IOP Control: IOP >21 mmHg	12 (54.4)
Hypotony	1 (4.5)
Evisceration	1 (4.5)

Clinical Characteristics

Comparison of Baseline Characteristics of Patients Eyes(N=27) at Final Follow Up		
	Pre-Cyclodiode	On Final Follow-Up
Mean Number, N (SD)		
OCT RFNL	83.3 (33.3)	67(28.3)
IOP (in mmHg)	35.9(15.7)	12.4(8.0)
BCVA (in Logmar) (SD)	1.6 (1.12)	1.98 (1.67)
NOM- Number of Medications (SD)	3.88(1.21)	1.70(1.66)
CDR (SD)	0.75 (0.18)	0.87 (0.18)
Mean Visual Field, N (SD)		
MD	-16.8(11.9)	-19.4(11.9)
PSD	4.49(2.87)	4.69(3.06)
VFI	51.2 (41.9)	40.6(40.5)
Oral Carbonic Anhydrase Inhibitor, N %	13(48.1)	1(3.7)

Conclusion

- 6 (22.2%) eyes had hypotony at some point following cyclodiode
- 6 (22.2%) eyes developed Band Keratopathy
- 3 (11.1%) eyes became phistical
- 1 eye required evisceration 2 weeks after cyclodiode
- 4 had CVI registration

References