Cyclodiode laser treatment for refractory glaucoma

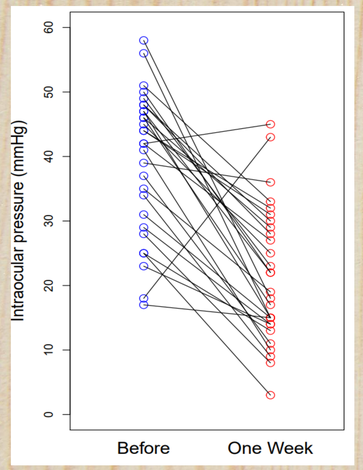
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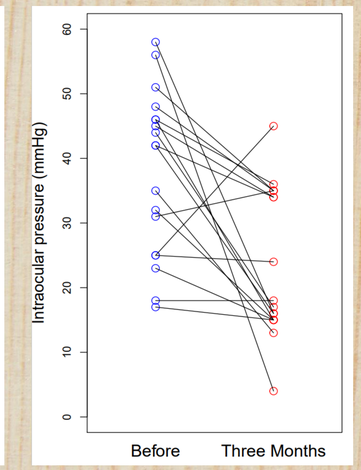
Introduction

Transscleral Cyclodiode laser is most commonly used for treatment of refractory glaucoma with poor visual potential. The G-probe is applied tangential to the corneoscleral limbus on pars plicata of ciliary body. This is identified by transilluminating it with a light source. Pars plicata is generally located 1 to 2 mm behind the limbus and laser energy is focused at a point. It helps by reducing aqueous formation and thereby lowering the eye pressure.

Purpose

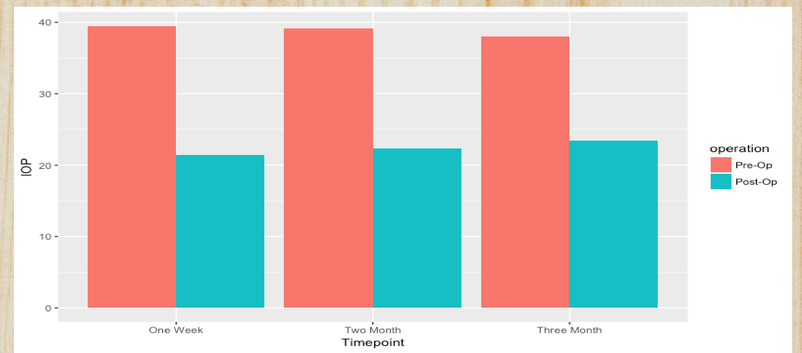
To evaluate the safety and efficacy of the current practice of trans-scleral diode laser cyclophotocaogulation (cyclodiode) for treatment of refractory glaucoma.





Materials & Methods

Data was collected from our hospital (Rochdale Infirmary) electronic system (Open Eyes and Evolve), total of 31 eyes who had undergone cyclodiode laser for refractory glaucoma, as a primary or repeat procedure, were studied between the period from November 2019 to June 2020. We looked at the diagnosis, number of shots, number of quadrants treated, energy and duration of laser used, pre-procedure IOP and post-procedure IOP, intraoperative and postoperative complications, as well as a survey to check the level of comfort post-procedure. The results of the study were compared to the UK national cyclodiode laser survey[1]. We followed the standard technique of starting power of 2.0 W and a 2.0 second duration (4.0 J per application)[2]. We decreased the power by 0.2 W according to whether we heard "pops" during applications. We started with power of 1.5 W in eyes with darker pigmentation and titrated the power settings according to the “pops” heard.



Results

A total of 31 eyes were studied, 23 (74%) were having cyclodiode laser for the first time, while 8 (26%) were having a repeat cyclodiode laser. The Average pre-procedure IOP was 40 mmHg, which have been reduced to 23 mmHg one week post-procedure, with a further reduction to 14 mmHg measured one month later. Average number of shots was 20. Majority had 3-4 quadrants treated. 15 eyes were treated using 2 W and 16 eyes using 1.4-1.8 W. All eyes were treated with 2.0 second duration. There was no intra-operative complications and only 2 patients developed ocular surface disease.

Conclusion

The current protocol followed has proven safe and efficient in treating refractory glaucoma using cyclodiode laser.

References

1) The UK National Cyclodiode Laser Survey. Eye (Lond). 2011 Feb;25(2):168-73. Agrawal P, Dulku S, Nolan W, Sung V.
2) Diode Laser Cyclophotocoagulation. Technique and results, March 2009. Douglas E. Gaasterland, https://glaucomatoday.com/articles/2009-mar/GT0309_05-php

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