Effects of Micropulse Transscleral Cyclodiode Laser on Secondary Open-Angle Glaucoma

Purpose

Micropulse transscleral cyclodiode (MP-TSCD, IRIDEX IQ810 Systems, CA) is used for glaucoma refractory to medical therapy. As this is a new technology, there are limited studies of its place in the treatment of glaucoma. The purpose of this study is to determine the efficacy of MP-TSCD in patients with secondary open angle glaucoma (SOAG).

Methods

A retrospective chart review was done to determine the effects of MP-TSCD in a total of 174 patients with glaucoma in a county public hospital setting. Of these, 17 patients were diagnosed with SOAG. Inclusion criteria for the study included age over 21 and diagnosis of SOAG. MP-TSCD settings included 2000 mW of 810 nm on micropulse mode (duty cycle 31.3%) delivered continuously for 80 seconds to the superior and 80 seconds to the inferior half of the eye with temporal and nasal sparing. Data was analyzed to compare intraocular pressure (IOP) response in patients with SOAG. Success was defined as a reduction of IOP by 20% from baseline and IOP between 8 and 21 at time of last follow up.

Results

The mean change in IOP in patients who underwent treatment with MP-TSCD was from 28.11 pre-procedure (n=17) to 16.58 (n=12) on post-procedure day one, 15.06 (n=15) on post-procedure week one, 18.57 (n=14) on post-procedure month one, 18.91 (n=11) on post-procedure month two, 18.29 (n=7) on post-procedure month three, 20.75 (n=8) on post-procedure month six, and 14.80 (n=10) at post-procedure month nine (p =0.41). Success rates were 40% (4 of 10) at time of last follow up visit. The only recorded side effects were hypotony (n=2) in all patients with SOAG undergoing the procedure.

Conclusion

MP-TSCD is a new technology allowing cyclophotocoagulation with minimal inflammation. There are few studies analyzing the outcomes of MP-TSCD in cases of SOAG. We found MP-TSCD is successful in lowering IOP and should be considered as a treatment option for SOAG. However, a larger sample should be studied to determine statistical significance.

Authors

Krishna Patel, MD

Brett M. Breshears, BS

Dan Nguyen

Thomas D. Patrianakos, MD

Michael C. Giovingo, MD

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