

COMBINATION OF ANTI-VEGF INJECTIONS AND MICROSECOND PULSE CYCLOPHOTOCOAGULATION IN THE MANAGEMENT OF NEOVASCULAR GLAUCOMA

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Purpose: Neovascular glaucoma (NVG) is a particularly challenging and prognostically poor form of glaucoma. This research evaluated the effectiveness of a dual treatment approach combining intraocular VEGF inhibitor injection and microsecond pulse cyclophotocoagulation (μ CPC) for managing secondary neovascular glaucoma.

Methods: The study included 58 patients (67 eyes) suffering from secondary neovascular glaucoma due to diabetes or thrombosis of the central retinal vein or its branches. The best corrected visual acuity (BCVA) ranged from hand motion to 0.4, with an average initial intraocular pressure (IOP) of 42 ± 12 mm Hg. Treatment consisted of an intraocular injection of Bevacizumab, a VEGF inhibitor, followed within 5-7 days by 810 nm infrared diode laser application in microsecond pulse mode at 2000 mW for a total duration of 220-240 seconds (145 – 160 J) and a duty cycle of 33.3%. Treatment success was determined by a decrease in anti-glaucoma drop (AGD) usage and maintaining an IOP between 11-21 mm Hg at the final follow-up. Follow-up assessments occurred at baseline, 1 week, and 1, 3, and 6 months post-treatment.

Results: On average, 1.3 treatments were administered per eye, with 20 eyes (30%) needing additional treatment with continuous-wave CPC within the first month. The mean IOP dropped to 28.5 ± 5.0 mm Hg after 1 week, 23.0 ± 5.3 mm Hg after 1 month, 19.5 ± 3.2 mm Hg after 3 months, and 18.5 ± 2.5 mm Hg after 6 months, showing a stable reduction in IOP starting at 3 months. The treatment was successful in 74% of cases. The use of AGD decreased from 2.0 ± 1.0 at baseline to 1.1 ± 1.2 at 1 month, then increased to 1.7 ± 1.0 at 3 months and 2.2 ± 1.2 by 6 months. No severe complications or hypotony were reported.

Conclusion: The combination of VEGF inhibitor injections and μ CPC offers an effective, safe, and prompt treatment for NVG over a six-month period.