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MICROIMPULSE CYCLOPHOTOCOAGULATION IN COMBINED NEOVASCULAR GLAUCOMA TREATMENTNazir Khodzhaev¹, Alla Sidorova¹, Evgenia Smirnova¹, Maria Eliseeva¹, Anna Starostina¹¹S.N. Fedorov NMRC "MNTK "Eye Microsurgery", Surgical Treatment of Glaucoma, Moscow, Russian Federation

Purpose: To evaluate preliminary results of a combined treatment, consisting of intraocular VEGF-inhibitors injection and microimpulse cyclophotocoagulation (CPC), in patients with a secondary neovascular glaucoma (NVG).

Methods: The investigation included 15 patients (15 eyes) with a secondary NVG. Average age was 65.9 ± 7.4 y.o. 11 patients had II type of diabetes melitus in their anamnesis for 11-17 years, 2 patients – I type of diabetes melitus. The pre-op IOP was from 28 to 44 mmHg (36.3 ± 4.4 mmHg), the number of antiglaucomatous drops was 3.5 ± 0.5 drugs. The treatment was combined, consisting of intraocular VEGF-inhibitors (ranibizumab) injection with the following transscleral diode-laser CPC in microimpulse mode after 7-14 days using «Cyclo G6 Glaucoma Laser System» (IRIDEX, USA) with a power of 2000 mWt, exposure of 160 sec. (80 sec. per hemi-sphere) and duty cycle 31.3%.

Results: No complications were observed. An average IOP level by the 6th month was 26.9 ± 3.3 mm Hg, the number of antiglaucomatous drops decreased down to 2.7 ± 0.7 drugs. We observed a decreased number of neovascularized vessels of the iris in all the patients by 1 month post-op. According to US-biomechanography data ciliary body (CB) pre-op thickness was 0.58 ± 0.14 mm. By the 6th month of follow-up there were no cases of CB atrophy, its average thickness was 0.53 ± 0.11 mm. According to OCT angiography data there was a positive dynamics by the 1st month of follow-up after the combined treatment: considerable decrease of the macula edema, decrease of the no-perfusion zone size and the number of new vessels.

Conclusions: The combined treatment of the patients with a secondary NVG, consisting of intraocular VEGF-inhibitors injection and microimpulse cyclophotocoagulation is an effective and safe method of IOP decrease.