

Ganglion cell function measured by ERG after IOP reduction in POAG

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This study evaluated retinal ganglion cell (RGC) function after intraocular pressure (IOP) reduction measured by pattern electroretinogram (PERG) in patients with newly diagnosed, non-treated preperimetric and early stages of primary open-angle glaucoma (POAG). Twenty-four eyes from 24 patients with POAG were included: 11 eyes with preperimetric glaucoma and 13 eyes with early glaucoma received Ganfort (bimatoprost and timolol) once a day for a period of one month. Before and after the treatment, the following measurements were analyzed: IOP, mean ocular perfusion pressure (MOPP), peak time of P50, and amplitude of P50 and N95 waves in PERG (ISCEV standard 2012). Correlations between PERG P50 and N95 waves, IOP and MOPP were calculated. After therapy, IOP significantly decreased in all eyes, on average 31%. A significant increase in MOPP in all eyes of on average 14% was detected. PERG amplitude of P50 and N95 waves increased in 75% and 79% eyes, respectively, and on average by 28% for P50 and 38% for N95. There were no significant interactions between the change of PERG parameters in time and stage of glaucoma. It can be concluded that significant IOP-lowering therapy could improve RGC function measured by PERG in patients with preperimetric and early stages of POAG.

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