

Clinical study of the influence of the anti-hypertensive drugs on the intraocular pressure level with Non-Corneal Through-The-Eyelid Diaton Tonometer

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Aim: To analyze the influence of the anti-hypertensive medicines on the intraocular pressure (IOP) level in patients.

Material and methods: 82 patients with arterial hypertension of the 1-st and 2-nd degree with high cardiovascular risk, 10 patients from this group had the Primary open-angle glaucoma. We used diuretics (Hydrochlorothiazide 12,5-25 mg/day), calcium channel-blocking agents (Amlodipine 2,5-5 mg/day), beta-adrenergic blocking agents (Bisoprolol 2,5-5 mg/day), inhibitors of angiotensin converting enzyme (iACE) (Enalaprilum 5-10 mg/day), nitrates (Isosorbide mononitrate 40-50 mg/day and Isosorbide dinitrate (1,25 mg/day). All the patients were measured IOP with transpalpebral Diaton tonometer before taking the medications, 3 and 24 h after taking the drugs and after 7-14 days. The IOP was measured initially during the use of Isosorbide dinitrate as the spray (ISOKET) 30, 60 and 90 min after taking it.

Results: The reliable change of IOP wasn't detected in patients who were taking diuretics, calcium channel inhibitors, iACE and B1-adrenergic blocking agents neither during the acute pharmacological testing, nor during the intake of the anti-hypertensive drugs. The IOP reduction was found during the intake of the B2-adrenergic blocking agents (mean initial IOP $19,2 \pm 1,3$ mmHg, mean IOP after 7-14 days $16,3 \pm 1,4$ mmHg). The increase of IOP was observed during the intake of the nitrates (mean initial IOP $18,8 \pm 1,2$ mmHg, mean IOP after 7-14 days $23,8 \pm 1,3$ mmHg). According to the results of the acute pharmacological testing the IOP increase was observed 40 min after the intake of one dose (1,25 mg) of Isosorbide dinitrate and remained increased up to 1,5 hours on patients with POAG (mean initial IOP $22,7 \pm 1,8$ mmHg, IOP after 40 min $26,1 \pm 1,9$ mmHg, IOP after 90 min $25,8 \pm 1,9$ mmHg).

Conclusions: Portable, ergonomic ophthalmotonometer diaton suits perfectly in general medical practice for IOP monitoring to make anti-hypertensive drugs treatment safe.

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