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Autor(en) des Beitrags: Nagel, E; Vilser, W; Lanzl, I

Titel des Beitrags: Dorzolamide influences the autoregulation of major retinal vessels caused by artificial intraocular pressure elevation in patients with POAG: a clinical study.

Abstract: PURPOSE: The study investigated whether dorzolamide influences the autoregulatory behavior of major retinal arterioles in glaucoma patients via a moderate perfusion pressure reduction. METHODS: The study included one eye each of 12 untreated patients with a primary open-angle glaucoma (POAG) (age 60.8 +/- 8.3, IOP 22.3 +/- 6.5 mmHg). Changes in the diameter of a retinal artery segment before (120 s), during (100 s), and after (380 s) artificial IOP elevation to 38 mmHg for 100 s were recorded continuously by means of a Retinal Vessel Analyzer. The measurement was repeated after 4-week treatment with dorzolamide eye drops t.i.d. RESULTS: Ocular perfusion pressure (mmHg) was reduced by the intraocular pressure (IOP) elevation from 58 (+/- 10) to 41 (+/- 11) in the pretreatment examination and from 60 (+/- 8) to 40 (+/- 8) posttreatment (differences between the examinations n.s.). Before IOP elevation, the arterial diameter was found to be +1.7 +/- 3.5% greater in the posttreated eyes than in the pretreated eyes (p< 0.02). During IOP elevation, the arterial diameter decreased by -1.8% +/- 3.8 in the pretreated eyes, whereas dilatation by +1.4% +/- 2.5 was observed in the posttreated eyes (p = 0.02). At the end of the observation period following IOP elevation, the vessel diameter in the pretreated eyes had increased by +1.8% +/- 4.2, whereas in the posttreated eyes it had
decreased by -1.7% +/- 3.0. On average, dorzolamide reduced IOP by -5.6 mmHg (p = 0.001).
CONCLUSIONS: The arterial diameter dilatation during IOP elevation in dorzolamide-treated eyes could be an accelerated counter-regulation on the induced elevated IOP and could constitute an additional therapeutic effect.

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