

Risk factors for visual field progression in treated glaucoma

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OBJECTIVE: To determine intraocular pressure (IOP) -dependent and IOP-independent variables associated with visual field (VF) progression in treated glaucoma.

DESIGN: Retrospective cohort of the Glaucoma Progression Study.

METHODS: Consecutive, treated glaucoma patients with repeatable VF loss who had 8 or more VF examinations of either eye, using the Swedish Interactive Threshold Algorithm (24-2 SITA-Standard, Humphrey Field Analyzer II; Carl Zeiss Meditec, Inc, Dublin, California) , during the period between January 1999 and September 2009 were included. Visual field progression was evaluated using automated pointwise linear regression. Evaluated data included age, sex, race, central corneal thickness, baseline VF mean deviation, mean follow-up IOP, peak IOP, IOP fluctuation, a detected disc hemorrhage, and presence of beta-zone parapapillary atrophy.

RESULTS: We selected 587 eyes of 587 patients (mean \pm SD age, 64.9 \pm 13.0] years) . The mean (SD) number of VFs was 11.1 (3.0) , spanning a mean (SD) of 6.4 (1.7) years. In the univariable model, older age (odds ratio \pm OR], 1.19 per decade; P = .01) , baseline diagnosis of exfoliation syndrome (OR, 1.79; P = .01) , decreased central corneal thickness (OR, 1.38 per 40 μ m thinner; P \leq .05) .

CONCLUSIONS: IOP-dependent and IOP-independent risk factors affect disease progression in treated glaucoma. Peak IOP is a better predictor of progression than is IOP mean or fluctuation.

Arch Ophthalmol. 2011 May;129(5) :562-8.

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<http://www.ncbi.nlm.nih.gov/pubmed/21555607>