



VISUAL FIELD AND OPTIC DISK PROGRESSION IN A LONGITUDINAL STUDY OF OPEN-ANGLE GLAUCOMA

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Purpose: To determine the relationship between progression of optic disk damage and visual field deterioration, and to investigate whether subsequent progression can be predicted by the baseline status of the optic disk and/or the visual field.

Design: Prospective Cohort Study

Participants: Seventy patients with early to moderate open-angle glaucoma

Main Outcome Measures: Optic disc and VF progression

Methods: Patients with VFs demonstrating depressed MD of -5.4 dB (range $+0.9$ to -13.0 dB) were followed at 6-monthly intervals with standard automated perimetry (Humphrey Field Analyzer, 30-2 full threshold) and confocal scanning laser tomography (Heidelberg Retina Tomograph) for a mean of 8.3 yrs (range 2.5 to 10.6 yrs). Progression was assessed by linear regression, separately for 4 sectors of the optic disk and the corresponding visual field areas. Criteria for progression were set so that both techniques identified a similar number of deteriorating patients (approximately 20%).

Results: Of 23 patients with visual field and/or optic disk progression (14 HRT, 13 HFA), only 4 met the criteria for progression on both tests. Patients with visual field progression had greater baseline damage, both of the visual field and of the optic disk, compared to those who did not show visual field progression. Patients who progressed at the optic disk only had less severe damage both of the optic disk and the visual field at baseline.

Conclusion: Functional and structural tests may provide independent and largely complementary measures of disease progression. In this sample of patients with early glaucoma, those with more significant baseline visual field damage were also at greater risk of later visual field progression.