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Baseline 24-2 Central Visual Field Damage is Predictive of Global Progressive Field Loss

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ABSTRACT

Purpose: Central visual field (VF) damage in glaucoma patients can significantly hinder daily activities. The present study investigates whether the presence of localized baseline damage to the central ten degrees of the VF is predictive of faster global mean deviation (MD) progression.

Design: Prospective, cohort study.

Methods: Eyes from the multicenter African Descent and Glaucoma Evaluation Study (ADAGES) with established glaucoma and VF loss and a minimum of five 24-2 VFs were eligible. Baseline central 24-2 damage was defined as any of the 12 central-most points with total deviation (TD) values at P<0.5% on two consecutive examinations. Progression was determined using trend-based and event-based criteria: (i) rates of MD change significantly faster than zero and (ii) >-5 dB MD loss over the entire follow-up.

Results: 827 eyes of 584 patients were studied. Mean rate of MD change of the entire sample was -0.15 dB/year (95% CI: -0.19 to -0.12, P<0.001). Eyes with baseline central damage progressed faster than those without (difference: $\beta_{central}$ = -0.07 dB/year, 95% CI=-0.11 to -0.01, P=0.011) and were more likely to experience MD loss greater than 5 dB [hazard ratio=3.0 (95% CI: 2.1 to 4.1, P<0.001)]. These differences remained significant after adjusting for confounders.