Canadian Glaucoma Study: 3. Impact of risk factors and intraocular pressure reduction on the rates of visual field change

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OBJECTIVES: To determine rates of visual field change associated with risk factors for progression in the Canadian Glaucoma Study (abnormal anticardiolipin antibody level, age, female sex, and mean follow-up intraocular pressure http://IOP) , and to evaluate the effect of IOP reduction on subsequent rates of visual field change in progressing patients.

METHODS: Two hundred sixteen patients (median age, 65.2 years) were followed up at 4-month intervals with perimetry and were monitored for progression. Patients reaching an end point based on total deviation analysis underwent 20% or greater reduction in IOP. Rates of mean deviation (MD) change were calculated.

RESULTS: Patients with 0, 1, and 2 end points had a median of 18, 23, and 25 examinations, respectively. The median MD rate in progressing patients prior to the first end point was significantly worse compared with those with no progression (-0.35 and 0.05 dB/y, respectively) . An abnormal anticardiolipin antibody level was associated with a significantly worse MD rate compared with a normal anticardiolipin antibody level (-0.57 and -0.03 dB/y, respectively) . Increasing age was associated with a worse MD rate, but female sex and mean follow-up IOP were not. After the first end point, the median IOP decreased from 18.0 to 14.8 mm Hg (20% in individual patients) , resulting in a significant MD rate change from -0.36 to -0.11 dB/y.

CONCLUSIONS: Patients with abnormal anticardiolipin antibody levels and increasing age had faster visual field change. Modest IOP reduction in progressing patients significantly ameliorated the rate of visual field decline.
