

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

Chauhan BC, Mikelberg FS, Artes PH, Balazsi AG, LeBlanc RP, Lesk MR, Nicoleta MT, Trope GE; Canadian Glaucoma Study Group

Collaborators (59)

Artes PH, Chauhan BC, LeBlanc RP, Nicoleta MT, Rafuse PE, Andrews DM, Humayun M, MacNeill J, Orr AC, Quigley JH, Sapp GA, MacDonald CA, Sauveur HM, Lavender SL, Balazsi AG, Kasner OP, Saheb NE, Coffey AJ, Connolly WE, Discepolo MJ, Kavalec CC, Lindley SK, Mullie M, Alexander P, May B, Douglas GR, Drance SM, Mikelberg FS, Blicher JA, Cottle RS, Wong V, Pardhan Z, Lesk MR, Alexander P, May B, Buys YM, Flanagan JG, Trope GE, Birt CM, Easterbrook MW, Macrae WG, Markowitz SN, Wolpert M, Eskander E, Macgillivray CA, Chauhan BC, Hicks E, Patterson K, Vassallo A, Andreou P, Chauhan BC, Mikelberg FS, Balazsi AG, LeBlanc RP, Lesk MR, Trope GE, Mikelberg FS, LeBlanc RP, Trope GE.

Department of Ophthalmology and Visual Sciences, Dalhousie University, Victoria, Halifax, Nova Scotia B3H 2Y9, Canada. bal@dal.ca

**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  $\text{http://IOP}$ ), 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.

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<http://www.ncbi.nlm.nih.gov/pubmed/20696979>