Tolerable rates of visual field progression in a population-based sample of patients with glaucoma

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AIMS: To provide population-based data on the maximum tolerable rate of progression to avoid visual impairment (maxTRoP_VI) and blindness (maxTRoP_BL) from open-angle glaucoma (OAG) .

METHODS: Participants with OAG in the Thessaloniki Eye Study (cross-sectional, population-based study in a European population) were included in the analysis. Visual impairment was defined as mean deviation (MD) equal to or worse than -12dB and blindness as MD equal to or worse than -24dB. Additional thresholds for visual impairment were tested. For each participant maxTRoP_VI was defined as the rate of progression which would not lead to visual impairment during expected lifetime. MaxTRoP_BL was defined accordingly. Both parameters were calculated for each OAG subject using age, sex, MD and life expectancy data. The eye with the better MD per subject was included in the analysis.

RESULTS: Among 135 subjects with OAG, 123 had reliable visual fields and were included in the analysis. The mean age was 73±6 years and the median MD was -3.65±5.28dB. Among those, 69.1% would have a maxTRoP_VI slower than -1dB/year and 18.7% would have a maxTRoP_VI between -1 and -2dB/year. Also, 72.4% would have a maxTRoP_BL slower than -2dB/year. For all tested thresholds for visual impairment, approximately 86% of the OAG study participants would not be able to tolerate a rate of progression equal to or faster than -2dB/year.

CONCLUSIONS: The majority of patients with glaucoma in our study would have a maximum tolerable rate of progression slower than -1dB/year in their better eye. Patient-tailored strategies to monitor the visual field are important, but raise the issue of feasibility with regard to the number of visual field tests needed.

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