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Abstract Information**Abstract Title:**

Central Corneal Thickness and Progression of the Visual Field and Optic Disc in Glaucoma

Purpose:

To determine whether central corneal thickness (CCT) is a significant predictor of visual field and optic disc progression in open-angle glaucoma.

Design:

Analysis of data from a prospective cohort study.

Participants:

Patients with open-angle glaucoma.

Main Outcome Measures:

Progression of visual field and optic disc damage using two analytical techniques.

Methods:

Data were obtained from a prospective study of glaucoma patients tested with static automated perimetry and confocal scanning laser tomography every six months. Progression was determined using a trend-based approach called Evidence of Change (EOC) analysis in which sectoral ordinal scores based on the significance of regression coefficients of visual field pattern deviation and neuroretinal rim area over time are summed. Visual field progression was also determined using the event-based Glaucoma Change Probability (GCP) analysis using both total and pattern deviation.

Results:

The sample contained 101 eyes of 54 patients (mean age of 56.5 ± 9.8 years) with a mean follow-up of 9.2 ± 0.7 years and 20.7 ± 2.3 sets of six-monthly examinations. Lower CCT was associated with worse baseline visual fields and lower mean IOP in the follow-up. In the longitudinal

analysis CCT was not correlated to the EOC scores for visual field or optic disc change. In the GCP analyses, there was a tendency for groups classified as progressing to have lower CCT compared to non-progressing groups. In a multivariate analyses accounting for IOP, the opposite was found whereby higher CCT was associated with visual field progression. None of the independent factors were predictive of optic disc progression.

Conclusion:

In this cohort of patients with established glaucoma, CCT was not a useful index in the risk assessment of visual field and optic disc progression.