Cardiovascular Disease may predict structural and functional progression in early glaucoma

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PURPOSE: To investigate the association between cardiovascular disease and baseline structural defects and longitudinal disease progression in glaucoma.

DESIGN: Prospective longitudinal cohort study of pre-perimetric and perimetric glaucoma.

PARTICIPANTS: 2628 eyes from 1314 participants recruited to the Progression Risk of Glaucoma: RElevant SNPs with Significant Association (PROGRESSA) study were evaluated for baseline and longitudinal structural thinning on Spectral Domain Optical Coherence Tomography (SD-OCT) , and visual field progression on Humphrey Visual Field (HVF) assessment.

METHODS: Patients were classified as showing predominantly mGCIPL, predominantly pRNFL or equivalent mGCIPL and pRNFL structural change at study enrolment. The cardiovascular disease and medication characteristics of these study groups were compared to a reference group of stable patients. Subsequent analysis assessed the association between cardiovascular characteristics and longitudinal SD-OCT or HVF progression.

OUTCOME MEASURES: Baseline and longitudinal SD-OCT and HVF progression.

RESULTS: After accounting for age and cardiovascular characteristics, patients with predominantly mGCIPL thinning at baseline had a higher prevalence of hypertension (OR: 2.70; 95% CI: [1.66, 4.41]; PCONCLUSION: Cardiovascular disease is an important risk factor for mGCIPL structural change and for disease progression in glaucoma. Treatment of hypertension may be important in preventing longitudinal progression in early glaucoma.

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