

The Relationship Between Components of Metabolic Syndrome and Open-Angle Glaucoma

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PURPOSE: To determine whether an association exists between various components of metabolic syndrome (diabetes mellitus [DM], systemic arterial hypertension [HTN], hyperlipidemia, and obesity) and open-angle glaucoma (OAG) in a large, diverse group of individuals throughout the United States.

DESIGN: Longitudinal cohort study.

PARTICIPANTS: All beneficiaries aged ≥ 40 years continuously enrolled in a managed care network who had 1 or more visits to an eye care provider during 2001 to 2007 were identified.

METHODS: Billing codes were used to identify individuals with OAG and those with components of metabolic syndrome. Cox regression was used to determine the hazard of developing OAG in enrollees with individual components or combinations of components of metabolic syndrome, with adjustment for sociodemographic factors, systemic medical conditions, and other ocular diseases.

MAIN OUTCOME MEASURES: Hazard of developing OAG.

RESULTS: Of the 2 182 315 enrollees who met the inclusion criteria, 55090 (2.5%) had OAG. After adjustment for confounding factors, those with DM (hazard ratio [HR] = 1.35 [95% confidence interval [CI], 1.21-1.50]) or HTN (HR = 1.17 [95% CI, 1.13-1.22]) alone or in combination (HR = 1.48 [95% CI, 1.39-1.58]) had an increased hazard of developing OAG relative to persons with neither of these conditions. By contrast, persons with hyperlipidemia alone had a 5% decreased hazard of OAG (HR = 0.95 [95% CI, 0.91-0.98]). Comorbid hyperlipidemia attenuated the increased hazard between HTN (HR = 1.09 [95% CI, 1.05-1.12]) or DM (HR = 1.13 [95% CI, 1.05-1.21]) and OAG.

CONCLUSIONS: At a time when the prevalence of metabolic disorders in the United States, is increasing this study furthers our understanding of risk factors associated with OAG and helps identify persons who may be at increased risk for this condition.

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