

The Association between Glaucomatous and Other Causes of Optic Neuropathy and Sleep Apnea.

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PURPOSE: To determine whether an association exists between sleep apnea and open-angle glaucoma, normal-tension glaucoma, nonarteritic ischemic optic neuropathy (NAION), papilledema, or idiopathic intracranial hypertension (IIH) and whether treatment with continuous positive airway pressure affects the development of these conditions.

DESIGN: Retrospective, longitudinal cohort study.

METHODS: Billing records for beneficiaries 40 years of age and older enrolled in a large United States managed care network from 2001 through 2007 were reviewed. Incidence of open-angle glaucoma, normal-tension glaucoma, NAION, papilledema, and IIH were determined for the beneficiaries and were stratified by sleep apnea status. Cox regression analyses determined the hazard of each of these conditions developing among individuals with and without sleep apnea, with adjustment for sociodemographic, ocular, and medical conditions.

RESULTS: Among the 2 259 061 individuals in the study, 156 336 (6.9%) had 1 or more sleep apnea diagnoses. The hazard of open-angle glaucoma was no different among persons with sleep apnea either treated (adjusted hazard ratio [HR], 0.99; 95% confidence interval [CI], 0.82 to 1.18) or untreated with continuous positive airway pressure (HR, 1.01; 95% CI, 0.98 to 1.05) and individuals without sleep apnea. Similar findings were observed when assessing the hazard of normal-tension glaucoma developing ($P > .05$ for both comparisons). A significantly increased hazard of NAION developing (HR, 1.16; 95% CI, 1.01 to 1.33) and IIH (HR, 2.03; 95% CI, 1.65 to 2.49) was observed among individuals with sleep apnea who were not receiving continuous positive airway pressure therapy as compared with individuals without sleep apnea, although similar increased risks could not be demonstrated among continuous positive airway pressure-treated sleep apnea patients for these conditions ($P > .05$ for both comparisons).

CONCLUSIONS: Patients with untreated sleep apnea are at increased risk for IIH and NAION. Clinicians should consider appropriate screening for these conditions in sleep apnea patients.

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