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Chronic CAD/Stable Ischemic Heart Disease

OBSTRUCTIVE SLEEP APNEA IS ASSOCIATED WITH INCREASED SEVERITY OF CORONARY ARTERY DISEASE AND WORSE CARDIOVASCULAR OUTCOMES

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Introduction: Obstructive sleep apnea (OSA) is associated with oxidative stress, risk factors including hypertension, and with binary presence of coronary artery disease (CAD). However, whether OSA contributes to the severity of CAD and to future adverse events in patients with CAD remains unknown. We hypothesized that OSA will be associated with greater severity of coronary atherosclerosis and worse cardiovascular outcomes.

Methods: In a case-control study of 893 patients recruited into the Emory Cardiology Biobank who underwent coronary angiography, 402 had documented OSA and 491 were free of OSA. Severity of CAD was documented using the Gensini score. Patients were followed-up for 2.5 years for prospective occurrence of major adverse cardiovascular events defined as death, myocardial infarction (MI) or revascularization. Multivariate linear regression and Cox proportional hazard models were performed to determine the associations of OSA with CAD severity and outcomes.

Results: After multivariate adjustment for age, gender, smoking, dyslipidemia, diabetes, body mass index (BMI), BP medication, BMI/OSA interaction and ejection fraction, OSA remained an independent predictor of higher Gensini coronary severity score ($p=.006$). Presence of OSA was associated with a 3.4 (CI 1.48-8.2, $p=0.007$) greater hazard for future adverse CVD outcomes. Using Cox proportional modeling, there was worsened survival for those with OSA compared to those without ($p=.044$).

Conclusions: In individuals with known CAD or at high risk for atherosclerosis, presence of OSA is associated with a greater severity of CAD and is predictive of worse cardiovascular outcomes.