

Blood pressure, cardiac structure and severity of obstructive sleep apnea in a sleep clinic population.

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OBJECTIVES : We investigated whether the severity of obstructive sleep apnea (OSA) predicts blood pressure or cardiac left ventricular thickness in a clinical population of OSA patients, if adjustments are made for age, gender, use of antihypertensive agents, smoking, body mass index, history of coronary artery disease, hypercholesterolemia and circulating C-peptide concentrations. **DESIGN :** Relationships in this cross-sectional study were investigated with correlation analysis and multiple regression procedures. **PATIENTS AND METHODS :** Apnea-hypopnea index (AHI, polysomnography) and office systolic and diastolic blood pressures (SBP and DBP) were measured in 81 subjects referred to a university hospital sleep laboratory. Ambulatory blood pressures were recorded during one 24 h cycle. Left ventricular (LV) muscle size was quantified as two-dimensionally directed M-mode-derived end-diastolic thickness of interventricular septum and posterior chamber wall. **RESULTS :** After adjustment for separate or the entire set of covariates, AHI predicted office SBP and DBP as well as daytime ambulatory DBP and night-time ambulatory SBP and DBP, but not daytime ambulatory SBP. In contrast, associations between AHI and LV muscle thickness reflected complex inter-relationships with confounding variables. Smoking and age suppressed, whereas body mass index (BMI) and hypertension inflated the relationship between OSA severity and LV muscle thickness in this study. **CONCLUSIONS :** AHI is an independent predictor of several measures of blood pressure. OSA severity and LV muscle thickness appear to be primarily linked via increased blood pressure.

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