Cardiovascular Hemodynamics in Patients with Sleep Disorder Breathing

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Author and Funding Information

Abstract

PURPOSE: Sleep Disorder Breathing (SDB) is associated with increased Cardiovascular Morbidity and Mortality. There are few studies utilizing Right and Left Cardiac Catheterization for assessment of Cardiovascular Hemodynamics in patients with Sleep Disorder Breathing. Our study examines the effect of Sleep Disorder breathing on Cardiovascular Hemodynamics.

METHODS: This study is a retrospective chart review of 63 confirmed SDB patients selected from the general population of a community practice in South Carolina, who underwent both Polysomnography and Right and Left Cardiac Catheterization. The tests were ordered independently of one another based on presenting symptoms. The indications for Polysomnography included snoring, fatigue, somnolence, and insomnia. The indications for Right and Left Cardiac Catheterization were heart failure, left ventricular dysfunction, and sleep apnea.

RESULTS: Of the 63 patients included in the study, 85.7% had Pulmonary Artery Systolic Pressure (PAS) >30. Eighty percent of patients had normal Left Ventricular function. The data was analyzed using Student’s t-test and Wilcoxon's Signed Rank Test. The norms for Right Ventricular Systolic Pressure (RV), Right Atrial Pressure (RA), and PAS were defined as RV<50, RA<10, and PAS<30. The null hypothesis for RV was rejected using both methods with p<0.001. The null hypothesis for RA was rejected for both methods with p=0.003 and p=0.043 respectively. The null hypothesis for PAS was rejected for both methods with p<0.001 respectively.

CONCLUSION: Sleep Disorder Breathing is associated with abnormal cardiovascular hemodynamics as evidenced by elevated RV, RA, and PAS pressures. Our data suggests that the population means of RV, RA, and PAS (for patients with Respiratory Distress Index >10) are above the norms.

CLINICAL IMPLICATIONS: Early detection and effective treatment of SDB may minimize cardiovascular morbidity and mortality. Further prospective, randomized study is needed to examine the effect of SDB on cardiovascular hemodynamics.

DISCLOSURE: N. Saxena, None.

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