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Title: Prevalence and severity of obstructive sleep apnea syndrome in patients with atherosclerosis: A study using carotid ultrasonography and coronary angiography

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Body: Background: Patients with cardiovascular disease have a high prevalence of sleep disordered breathing (SDB). Thus, SDB may be an independent predictor of cardiovascular disease Methods: This study included 2 groups; Group I: 15 healthy control subjects referred to coronary angiogram, diagnosed to be free from coronary artery disease. Group II: 50 patients diagnosed to have atherosclerosis as a part of diagnostic coronary angiography and they underwent sleep study and carotid ultrasonography. Results: 33 (66%) out of 50 patients with diagnosed atherosclerosis through coronary angiography have obstructive sleep apnea (AHI >5). The mean value of AHI was significantly higher in group II than group I. Obstructive sleep apnea patients were classified into three groups according to the results of coronary angiography; group A with normal or non significant coronary artery disease (CAD) less than 50% lesion. Group B with single vessel CAD, they were 6 (27.2%) with mild, 1 (16.6%) with moderate and 1 (20%) with severe OSAS. Group C with more than one vessel affected 7 (31.8%) with mild, 3 (50%) with moderate and 4 (80%) with severe OSAS. Univariate analysis showed that intima media thickness and carotid diameter significantly correlated with AHI and SpO₂. Conclusions: There was a significant relationship between the OSAS and severity of atherosclerosis in both coronary and carotid vascular beds. The findings suggest that the severity of OSAS is an important contributor to coronary atherosclerosis and the patients with more serious OSAS would have more serious and complex coronary artery lesions.