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Title: P wave dispersion and severity of obstructive sleep apnea syndrome

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Body: Background: OSA is associated with an increased prevalence of coronary artery disease, heart failure and rhythm disturbance. Also, P-wave dispersion (Pd) reflects inhomogeneous atrial depolarization secondary to insults such as chronically elevated atrial pressure, ischemia, or metabolic stress that promote atrial structure remodeling and provide a substrate for atrial fibrillation. We aimed to investigate Pd in patients with OSA and to determine if there is any relationship with severity of the disease. Patients and Methods: This study was conducted in chest & cardiology departments, Assiut University hospital, Egypt on 40 OSA patients (29 males and 11 females), and 20 healthy controls. We excluded patients with COPD and any diagnosed cardiac disease. For every patient, we did a polysomnography and ECG. Results: Pd was significantly more in OSA (98.50 ± 4.77 m/s) than controls (72.00 ± 3.37 m/s) ($p < 0.05$). Pd in severe, moderate and mild OSA were (111.43 ± 5.62 m/s), (95.00 ± 7.83 m/s) and (65.71 ± 8.41 m/s) respectively with a significant positive correlation with severity of OSA. Multiple linear regression show that systolic blood pressure and BMI are independently associated with Pd ($\beta=0.56$, $p=0.00$). ($\beta=0.27$, $p=0.05$) as in table 1.

Conclusion: Pd is increased and correlated with severity of OSA. systolic blood pressure and BMI are independent risk factors for Pd. Follow up of patients to detect clinical implications is recommended.