We assessed the impact of severity of OSAS on the atrial size and CRP level in patients who were found to have atrial premature complexes.

**Methods** 277 patients diagnosed with obstructive sleep apnoea after overnight polysomnography underwent a 24-h Holter electrocardiography and ambulatory blood pressure monitoring. 137 patients (49%) were found to have premature atrial complexes (PAC). These patients were classified into 3 groups according to the apnoea-hypopnoea index (AHI) as mild (5 ≤ AHI < 15), moderate (15 ≤ AHI < 30) and severe (AHI ≥ 30). Their C-reactive protein level was assessed by a high-sensitive radio-immunoassay. Of the 137 patients with PAC, 77 underwent transthoracic Doppler echocardiography (TTE) and their left atrial diameter (LAD), interventricular septal thickness (IVSD), left ventricle posterior wall thickness (LVFW), left ventricle mass weight (LVWM), peak diastolic early (E) and late (A) transmitral flow were recorded and their respective E/A ratio and left ventricular ejection fraction (LVEF) calculated CRP and echocardiographic parameters were compared between the different severity of OSAS patients having premature atrial complexes.

**Results** There is a high prevalence of premature atrial contraction in OSAS patients’ reactive protein and left atrial diameter was significantly increased with severity of OSAS irrespective of systolic and diastolic function. CRP was higher in severe OSAS (5.01 ± 1.82) mg/L and mild OSAS (2.98 ± 1.52) mg/L, [mild v/s severe OSAS (p < 0.040); moderate v/s severe (p < 0.035)]. Left atrial diameter was also increased in severe OSAS (40.1 ± 7.9) mm as compared to moderate (37.9 ± 5.5) mm and mild OSAS (33.7 ± 3.8) mm, [mild v/s moderate (p < 0.025), mild v/s severe OSAS (p = 0.002)].

**Conclusion** The prevalence of premature atrial contraction (PAC) in OSAS patients is in line with the prevalence of AF in OSAS patients. Severity of OSAS was associated with increase in left atrial size and CRP level in patients with premature atrial complexes. Inflammation associated with OSAS might contribute to atrial structural and electrical remodelling in OSAS patients with premature atrial contraction.

**Clinical Factors of Influencing Heart Rate Variability**

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**Objective** To compare the influence of different clinical factors on the HRV time domain, frequency-domain indicators and the strength and type of influence.

**Methods** A retrospective study on the long-time HRV time domain, frequency-domain values of 192 patients with diabetes, coronary heart disease (CHD), hypertension, cancer and cervical spondylosis (CS), to observe the strength and type of each factor when there are multiple factors simultaneously using multiple linear regression statistical method.

**Results** In different age patients with complications of diabetes, CHD, hypertension, cancer and CS, the significant influencing factors on HRV were age, diabetes and CS. Made SDNN values as the dependent variable, enrolled the final regression equation was in turn age (β = −0.252, p < 0.001), diabetes (β = −0.237, p < 0.001) and CS (β = 0.151, p = 0.024). Made SDANN values as the dependent variable, enrolled the final regression equation was also in turn age (β = −0.271, p < 0.001), diabetes (β = −0.256, p = 0.001) and CS (β = 0.142, p = 0.056); Made LF values as the dependent variable, enrolled the final regression equation was also in turn age (β = −0.364, p < 0.001), diabetes (β = −0.216, p = 0.001) and CS (β = 0.138, p = 0.034); Made TP values as the dependent variable, enrolled the final regression equation was only age (β = −0.285, p < 0.001) and diabetes (β = −0.174, p = 0.011); Made HF values as the dependent variable, enrolled the final regression equation was also age (β = −0.277, p < 0.001) and diabetes (β = −0.162, p = 0.020); which meaning age and diabetes were a negative correlation with SDNN, SDANN, TP and LF, while CS was positively correlated with SDNN, SDANN and LF. Only diabetes had significant influence on RMSSD, it was negatively correlated with RMSSD (β = −0.148, p = 0.040).

**Conclusion** Age increase and having diabetes will significantly reduce the overall tension of autonomic nervous and sympathetic tone, and diabetes can significantly lower vagal tone factor.