EL3-1 Clinical Significance of Sleep Apnea Syndrome (SAS) in Japanese Patients: Efficacy of CPAP Therapy in SAS-associated Arrhythmias

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Background: The purpose of this study was to determine the relationship between sleep apnea syndrome (SAS) and cardiovascular disorders, and to assess the efficacy of continuous positive airway pressure (CPAP) in SAS-associated arrhythmias. SAS is associated with cardiovascular disorders, such as hypertension, ischemic heart disease, and arrhythmias. CPAP is one of the effective treatments for SAS; however, this relationship and efficacy remain undefined.

Methods and Results: The study population comprised 1413 Japanese subjects (mean age: 56.6 years old, 1123 men and 290 women) who were divided into two groups: SAS group (n=1064, apnea-hypopnea index (AHI)≥20) and control group (n=349, AHI<20) by polysomnography (PSG) analysis. In baseline characteristics, age (58.3±14.7 vs. 50.0±18.4, p<0.0001), gender (male: 88.4% vs. 72.9%, p<0.0001), BMI (25.9±4.4 vs. 23.2±3.7, p<0.0001), hypertension (38.0% vs. 19.3%, p<0.0001), diabetes (10.4% vs. 5.2%, p=0.015), or hyperlipidemia (15.6% vs. 9.3%, p=0.018) were significantly associated with SDB. PSG revealed predominant occurrence of paroxysmal atrial fibrillation (PAF: 108/1064 vs. 3/349, p=0.005), premature ventricular complex (PVC: 359/1064 vs. 17/349, p<0.001), and sinus arrest ≥2 sec: 172/859 vs. 6/349, p=0.002) in SAS group. In the SAS group, 291 patients underwent CPAP titration and were then re-evaluated. CPAP therapy significantly reduced the occurrences of PAF (59/291 vs. 2/291, p=0.005), sinus bradycardia (18/291 vs. 0/291, p=0.002), and sinus pause (26/291 vs. 4/291, p=0.016).

Conclusions: Significant relationship between SAS and several cardiac disorders, and efficacy of CPAP in preventing SAS-associated arrhythmias in a large population of Japanese patients.

Keywords: sleep apnea syndrome, arrhythmia, CPAP