The predictors of adherence with nasal continuous positive airway pressure treatment in Japanese

Authors:
K Seki, S Takaita, K Itagaki, Yamaguchi Rosai Hospital, Department of Cardiology - Sanyo-Onoda - Japan,

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Introduction: Continuous positive airway pressure (CPAP) is considered the first line treatment for obstructive sleep apnea syndrome (OSAS). CPAP adherence, however, is suboptimal. Poor CPAP adherence could not prevent cardiovascular events. An early intervention in patients with poor adherence with CPAP may have a better likelihood of avoiding dropout from CPAP or improving adherence.

Purpose: To determine the predictors of CPAP adherence in patients with OSAS.

Methods: We studied 291 (219 male 72 female) patients with OSAS with an apnea hypopnea index (AHI) = 20 events per hour were enrolled in from April 2014 to march 2017 at 4 Clinical Centers. The introduction of CPAP treatment was performed in patient with OSAS in the hospital for education including neurocognitive performance or in outpatient with OSAS in their home, receiving education excluding neurocognitive performance. We assessed the relationship between apnea hypopnea index (AHI), the Epworth Sleepiness Scale score (ESS), B-type natriureic peptide (BNP), the type D personality (depressed state assessed by means of a valid and reliable 14-item questionnaire) and health-related quality of life using the Short Form (36) Health Survey (SF-36) and CPAP adherence (good: ≥4 h every night, 70% days in a month).

Results: 219 male were mean age 60.1±13.7 years, mean BMI 26.8kg/m2, mean AHI 44.8/h, and 72 female were 63.4 ±13.8 years, 28.2 kg/m2, 50.5/h, respectively. CPAP treatment improved ESS from 7.5±4.1 to 5.3±3.2 after 3 months (p=0.009), AHI from 44.8±19.4 to 6.1±6.2 (p<0.001) in the first month. CPAP adherence declined 89.8% in 1 month?73.6 % in 6 months, 68.2 % in 12 months. There were no difference in CPAP adherence among 4 Clinical Centers (p=0.47). There were not relationship between CPAP adherence and sex, age (≥ 40 years), AHI (≥30), ESS (≥11), BNP, type D personality. However, BMI(≥25 p=0.01) and patients with initiating CPAP treatment in the hospital have better adherence than outpatients with initiating CPAP treatment in their home (hazard ratio 0.40 (95 % CI 0.16-0.9 p=0.043) . Although CPAP treatment improved health-related quality of life (vitality, mental health, before CPAP vs after, 48.4 vs 51.4, 49.4 vs 52.5, p <0.05, respectively), there was no difference in relationship between CPAP adherence and improvement of vitality or mental health.

Conclusions: Patents with OSAS in the hospital, receiving education including neurocognitive performance, were good adherence to CPAP treatment. Severity of OSAS, Depress state, and improvement of health quality did not impact on CPAP adherence. This study showed education is important to keep CPAP good adherence in Japanese as well as Western people.