Hours of nightly nasal continuous positive airway pressure use is associated with weight change in patients with obstructive sleep apnea-hypopnea syndrome

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Nasal continuous positive airway pressure (nCPAP) is known to alleviate sleep-related disturbances and may reduce the risk of hypertension and cardiovascular disease. Using an electronic database of number of hours of nightly CPAP use, we estimated the habitual sleep time of patients during nCPAP and examined its relationship to association with changes in body weight. In obese patients with obstructive sleep apnea-hypopnea syndrome (OSAHS), percent weight gain over 9 years displayed a U-shaped relationship with the minimal weight gain in patients with 5 to 6 hours of habitual sleep. In contrast, weight gain was the largest in patients with sleep time of less than 4 hours per night or more than 8 hours per night. These results suggest that changes in body weight in patients with OSAHS are associated more with habitual sleep time.





Significance of differences in percent change in body weight relative to the group with sleep time less than 4 hours (\ddagger : p<0.05, \ddagger : p<0.01). Comparison of each group with the 4.0 \le Sleep time <5.0 gro (\ddagger : p<0.05). Hours of CPAP use and change in body weight in the obese group Significance of differences in body weight changes relative to the group with sleep time less than 4 hours(1: p-0.05). Significance of differences in body weight changes relative to the group with sleep time less than 8 hours(§: p<0.05, 4: p<0.01).

Sleep time: Each patient was interviewed as to the time from nCPAP application until falling asleep on a representative day during the therapy (A) and the time from waking in the morning until removal of the nCPAP device (B). A+9 was subtracted from average device usage time (C, hereinafter simply called "average usage") to yield the sleep time on CPAP per day (hereinafter called "sleep time"). Subjects were also asked about daily exercise time during the interview. Sleep time on CPAP (5T-CPAP) = C - (A+6). X4Ag: Change in body weight by the time of measuremer (body weight 1 a given time point - baseline body weight) + baseline body weight x 100