The sleep position trainer: a new treatment for positional obstructive sleep apnoea

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Abstract
Background Positional obstructive sleep apnoea (POSA), defined as a supine apnoea–hypopnoea index (AHI) twice or more as compared to the AHI in the other positions, occurs in 56 % of obstructive sleep apnoea patients. Positional therapy (PT) is one of several available treatment options for these patients. So far, PT has been hampered by compliance problems, mainly because of the usage of bulky masses placed in the back. In this article, we present a novel device for treating POSA patients.

Methods Patients older than 18 years with mild to moderate POSA slept with the Sleep Position Trainer (SPT), strapped to the chest, for a period of 29±2 nights. SPT measures the body position and vibrates when the patient lies in supine position.

Results Thirty-six patients were included; 31 patients (mean age, 48.1±11.0 years; mean body mass index, 27.0±3.7 kg/m²) completed the study protocol. The median percentage of supine sleeping time decreased from 49.9 % [20.4–77.3 %] to 0.0 % [range, 0.0–48.7 %] (p<0.001). The median AHI decreased from 16.4 [6.6–29.9] to 5.2 [0.5–46.5] (p<0.001). Fifteen patients developed an overall AHI below five. Sleep efficiency did not change significantly. Epworth Sleepiness Scale decreased significantly. Functional Outcomes of Sleep Questionnaire increased significantly. Compliance was found to be 92.7 % [62.0–100.0 %].

Conclusions The Sleep Position Trainer applied for 1 month is a highly successful and well-tolerated treatment for POSA patients, which diminishes subjective sleepiness and improves sleep-related quality of life without negatively affecting sleep efficiency. Further research, especially on long-term effectiveness, is ongoing.

Keywords Positional therapy · Positional · OSA · Obstructive sleep apnoea

Abbreviations
AHI Apnoea–hypopnoea index
CPAP Continuous positive airway pressure
ESS Epworth Sleepiness Scale
FOSQ Functional Outcomes of Sleep Questionnaire
OSA Obstructive sleep apnoea
POSA Positional obstructive sleep apnoea
PSG Polysomnography
PT Positional therapy
SD Standard deviation
SPT Sleep Position Trainer