Effects of suboptimal adherence of CPAP therapy on symptoms of obstructive sleep apnoea: a randomised, double-blind, controlled trial

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ABSTRACT

Introduction: Continuous positive airway pressure (CPAP) is currently the treatment of choice for sleepiness in patients with obstructive sleep apnoea (OSA); however, adherence is often thought to be suboptimal. We investigated the effects of suboptimal CPAP usage on objective and subjective sleepiness parameters in patients with OSA.

Material and methods: In this 2-week, parallel, double-blind, randomised controlled trial we enrolled moderate-to-severe OSA patients with excessive pre-treatment daytime sleepiness (Epworth sleepiness scale (ESS) score >10 points) who had suboptimal CPAP adherence over ⩾12 months (mean nightly usage time 3–4 h). Patients were allocated through minimisation to either subtherapeutic CPAP ("sham CPAP") or continuation of CPAP ("therapeutic CPAP"). A Bayesian analysis with historical priors calculated the posterior probability of superiority.

Results: Between May, 2016 and November, 2018, 57 patients (aged 60±8 years, 79% male, 93% Caucasian) were allocated in total, and 52 who completed the study (50% in each arm) were included in the final analysis. The unadjusted ESS score increase was 2.4 points (95% CI 0.6–4.2, p=0.01) in the sham-CPAP group when compared to continuing therapeutic CPAP. The probability of superiority of therapeutic CPAP over sham CPAP was 90.4% for ESS, 90.1% for systolic blood pressure and 80.3% for diastolic blood pressure.

Conclusions: Patients with moderate-to-severe OSA and daytime sleepiness are still getting a substantial benefit from suboptimal CPAP adherence, albeit not as much as they might get if they adhered more. Whether a similar statement can be made for even lower adherence levels remains to be established in future trials.