

An individually adjustable oral appliance vs continuous positive airway pressure in mild-to-moderate obstructive sleep apnea syndrome

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Background: For the treatment of nonsevere obstructive sleep apnea syndrome (OSAS), mandibular advancement devices (MADs) are employed as an alternative to nasal continuous positive airway pressure (CPAP) therapy. However, very few specific data on the effectiveness of MADs in this group of patients are available. We therefore compared an individually adjustable intraoral sleep apnea device (ISAD) that permits movements of the lower jaw in three dimensions, with CPAP in the treatment of patients with an apnea/hypopnea index (AHI) $\leq 30/h$.

Methods: In a randomized crossover study, 16 men and 4 women (mean \pm SD age, 56.5 \pm 10.2 years; body mass index, 31.2 \pm 6.4; AHI, 17.5 \pm 7.7/h) were treated for 6 weeks with each modality.

Results: In the initial phase, a significant improvement in AHI (baseline, 17.5 \pm 7.7/h; ISAD, 10.5 \pm 7.5/h [$p < 0.05$]; CPAP, 3.5 \pm 2.9/h [$p < 0.01$]) and in breathing-related arousals (baseline, 8.9 \pm 6.1/h; ISAD, 3.7 \pm 3.3/h [$p < 0.01$]; CPAP, 1.4 \pm 1.6/h [$p < 0.01$]) was achieved with both modalities. Considering all 20 subjects, after 6 weeks of treatment, normalization of the respiratory parameters was seen only with CPAP. However, 30% of the patients had a lasting reduction in AHI to $< 10/h$ with the ISAD also. The patients considered the ISAD to be easier to use (scale of 1 to 6: ISAD, 1.8 \pm 1.1; CPAP, 3.1 \pm 1.5 [$p < 0.05$]), and indicated greater utilization of the device in comparison with CPAP.

Conclusion: Even in patients with mild-to-moderate OSAS, CPAP is the more effective long-term treatment modality. **In the individual case, the better compliance seen with the ISAD may be advantageous.**