

Dr. James E. Metz

Providing Solutions for Complex Dental Problems

The Metz Center for Sleep Dentistry | 1271 E. Broad St. | Columbus, OH 43205 | 614.252.4444 | www.themetzcenter.com

TMJ/Orofacial Pain & Dental Sleep Medicine

Winter 2018

Impact of an Oral Appliances on Obstructive Sleep Apnea Severity, Quality of Life, and Biomarkers

Fernández-Julián E, Pérez-Carbonell T, et al.

Laryngoscope. 2017 Nov 20

The purpose of this study was to investigate outcomes including efficacy, quality of life, and levels of inflammatory markers of a mandibular advancement device (MAD) for moderate-to-severe obstructive sleep apnea (OSA). Patients with apnea-hypopnea index (AHI) $\geq 15/\text{hr}$ who only accepted MAD therapy (study group) or who refused any treatment (control group) were recruited. At baseline and at 6 months, polysomnography, Epworth Sleepiness Scale (ESS), Functional Outcomes of Sleep Questionnaire (FOSQ), C-reactive protein (CRP), interleukin 1 β , interleukin 6, and tumor necrosis factor α (TNF- α) were assessed in both groups.

At baseline, the study group ($n = 30$) showed a higher percentage of rapid eye movement sleep and higher CRP levels than the control group ($n = 10$). At 6 months, the MAD significantly improved AHI and lowest oxygen saturation, non-rapid eye movement (N)1 and N3 sleep stages, ESS score, FOSQ total score, interleukin 1 β , and TNF- α compared with the untreated group. In the overall, moderate, and severe OSA groups, 63.3%, 75%, and 50%, respectively, achieved at least good response.

Use of a MAD significantly improved polysomnographic parameters, quality of life, and some inflammatory markers (CRP, IL- β , and TNF- α) in a significant proportion of patients with moderate OSA and in some patients with severe OSA. Hence, a MAD may be a viable alternative therapy in patients with moderate-to-severe OSA who refuse continuous positive airway pressure.