



## **ORAL APPLIANCES IN OBSTRUCTIVE SLEEP APNEA SYNDROME: OUR EXPERIENCE.**

*Presenting Author: Mercedes Martín Romero (Spain)*

Martín Romero M, Reina Marfil N, Ortega Sáenz De Tejada E, Hidalgo Sánchez R, Amecrane N, Hidalgo Sanjuán M

**INTRODUCTION:** Mandibular Advancement Devices (MAD) are employed in the treatment of mild or moderate obstructive sleep apnea syndrome (OSAS) or in severe patients who do not tolerate the CPAP or who refuse surgery. The target of our study was to evaluate the response to a MAD designed by OrthoApnea in the treatment of OSAS in adults.

**MATERIALS and METHODS:** This is a prospective study, where we included 103 patients with mild or moderate OSAS diagnosed by respiratory polygraphy. We excluded those patients with serious comorbidity, severe obesity, anatomic problems that prevent MAD placing, high gag reflex and pregnant women. A polygraphy and a 3D i-CAT CT scans were performed before and after one month of treatment with MAD. We registered the following variables: sex, age, airway area and volume, total apnea-hypopnea index (AHI) – in supine and other positions –, total number of apneas, number of obstructive apneas and hypopneas, oxygen desaturation per hour index (ODI) and percentage of time during which the saturation was under 90% (CT90). We considered an effective treatment when the control polygraphy with MAD was normal (AHI lower than 5) or a significant reduction in the AHI was reached. The results were analyzed by Student's T- test for paired data, nonparametric Wilcoxon test and McNemar test.

**RESULTS:** Of the 103 patients included, 84 were men (81.6%) and 19 were women (18.4%). The average age was of  $46.47 \pm 9.71$ . The body mass index (BMI) average was of  $27.36 \pm 2.45$  kg/m<sup>2</sup>. The airway area patency and volume increased after the treatment (area from 256 to 308 mm<sup>2</sup>; volume from 4533 to 6356 mm<sup>3</sup>). We obtained after treatment a statistically significant decreases ( $p < 0.05$ ) in the following respiratory parameters : average AHI (from 16.2 to 6), both in supine (from 25.1 to 6.9) and other positions (from 7.8 to 3.9), average of total apneas (from 69.2 to 9.5), average of obstructive apneas (from 34 to 8.7), average of hypopneas (from 70.1 to 24.8), desaturation per hour index average (from 13.7 to 288 5.5) and average CT90 (from 1.6 to 0.6). In 72.80% of the cases the AHI was halved. In 90.30%, an AHI under 10 was reached and in 61.2%, under 5.

**CONCLUSION:** In our opinion, the use of OrthoApnea MAD is an efficient therapeutic alternative in patients with mild and moderate OSAS, increasing airway area patency and volume, thus reducing the respiratory events as the AHI an desaturation and improving some of its pathophysiologic consequences.