PRELIMINAR RESULTS OF AN ORAL APPLIANCE DEVICE IN MILD TO MODERATE OBSTRUCTIVE SLEEP APNEA SYNDROME

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Introduction

The first line treatment of Obstructive Sleep Apne-Hyponea Syndrome (OSAHS) is CPAP. Oral appliances are an useful therapeutic alterntive, but its efficacy varies between different studies, with aproximetly a mean efficacy of 52%, if we define therapeutic success as a final AHI < 5

Objective

To evaluate the efficacy of an oral appliance (Orthoapnea®) in patientes with mild to moderate OSAHS.

Methods

We evaluated in 25 patients the quality of sleep (Pittsburgh), somnolence (Epworth Sleepiness scale (ESS), subjective snore (visual analogue snore scale (VASS), Snore Outcome Survey (SOS), Spouse/Bed Partner Survey (SBPS), and sleep parameters with conventional nocturnal Video-Polysomnography (V-PSG) before and after oral appliance treatment.

Table 1. Population description

Descriptive analysis	
Sex (male), n (%)	18 (72%)
Age, mean±SD	50.6±10.3
BMI, mean±SD	27.5±2.7
Epworth, mean±SD	10±5.7
SBP, mean±SD	137.2±12.5
DBP, mean±SD	85.2±8.1

Table 2. Subjective and objective sleep parameters

Variable/scale	PRE	POST	P
ESS	10.0±5.7	7.8±5.3	0.007
VASS	6.8±2.2	2.3±2.1	<0.001
Pittsburgh	7.4±4.1	5.2±3.3	0.001
SE Pittsburgh	82.9±16.4	88.5±13.3	0.106
SOS	20.4±7.3	30.9±6.4	<0.001
SBPS	6.5±2.3	11.4±2.8	<0.001
SE PSG	80.2±10.8	81.5±8.2	0.538
Phase changes	124.0±31.4	112.6±30.3	0.141
WASO	58.9±39.7	48.7±21.6	0.239
SL	24.1±25.5	29.8±39	0.435
REML	130.9±59.7	116.8±62.7	0.324
N1	13.5±6.8	9.1±3.2	0.004
N2	56.7±9.7	56.7±8.8	0.987
N3	12.5±7.7	14.6±8.7	0.286
REM	17.3±6.2	19.5±7.8	0.064
Arousal	23.5±10.6	13.5±6.3	<0.001

ESS: Epwort hsleepines scale, VASS: Visual analogica snore scale, SE: Sleep efficiency, WASO: wake after sleep onsert, SL: Sleep latency, REML; REM latency

Results

-We studied 25 patients 72% male 28% female with a mean age 50,6±10,3, mean body mass index (BMI) 27,6±2,8 , and mean RDI 16,8±6,3. (**Table 1**)
-We observedstatistical differences in ESS, VASS, Pittsburgh, SOS and SBPS, N1, Arousal, Snore index, respiratory effort related to arousal, hypopnea, obstructive apnea, and ODI>3%. (**Table 2**)
-There was statistically significant improvement in: global RDI(-11,6) with RDI <5 in 68%, Supine RDI(-22,5) with RDI<5 in 55,6%, non-supine RDI(-7,3) RDI <5 in 78,9% and NREM-RDI(-10,8) with RDI<5 in 80%. No significant improvement were observed in REM-RDI(-7,7) with RDI<5 in 53,3%. (**Table 3, Figure 1, Figure 2**)
-The improvement of the RDI did not have correlation with the age weight, and time in postural position.

Table 3. Respiratory parameters results

Variable	PRE	POST	P
Obstructive hypopnea	12±5.9	3.5±5.0	<0.001
Obstructive apnea	1.91±2.61	0.48±1.35	0.007
RERAs	2.4±1.8	1±1.6	0.001
Snoring index	271.2±212.7	97.4±133	0.002
Global RDI	16.9±6.3	5.3±7.2	<0.001
REM-RDI	12.8±11.5	5.1±6.6	0.001
NREM-RDI	14.8±8.0	4.0±6.4	<0.001
% Supine position	37.9±25.6	32.9±20.0	0.372
Supine RDI	32.9±17.5	11.4±16.3	<0.001
Non-supine RDI	11.0±6.8	3.7±6.0	0.001
ODI>3%	10.6±7.5	4.4±4.6	<0.001
CT90	3.9±11.5	3.6±7.3	0.860
MPP	3.7±5.3	4.1±6.9	0.828

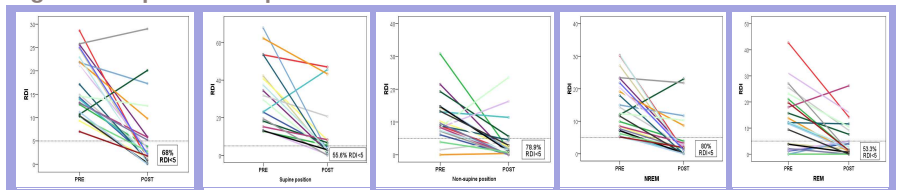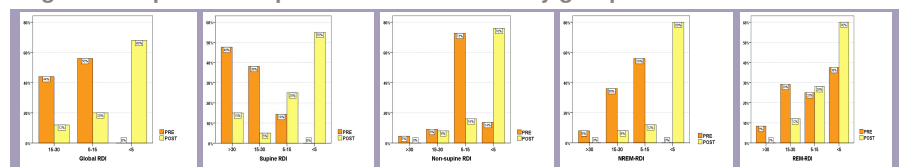**Figure 1 Graphic AHI improvement**

Figure 2 Graphic AHI improvemente in the severty group

Conclusions

The Orthoapnea® Oral appliances can be an effective treatment for mild to moderate OSAHS, with improvement of both, subjective and objective sleep parameters.