EFFECTS OF A DENTAL DEVICE "SILENSOR" IN PATIENTS WHO SNORE

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INTRODUCTION

With the intention to treat patients who snore, but do not meet the criteria for Sleep Apnea Syndrome, a new kind of treatment was introduced on our center. This treatment was based on the results of a literature study, which were presented on the 13th Congress of the European Sleep Research Society, June 1996 in Brussels, Belgium (1 t/m 7).

A dental device, named "SILENSOR" was developed by a dental laboratory together with a dentist with special interest in this subject. The "SILENSOR" consists of caps over the patients own upper and lower teeth. Both caps are connected by bands, one at each side. The device is constructed in such a way that the jaw gets somewhat protruded when the mouth is slightly opened. We evaluated the effects of the "SILENSOR" on snoring, sleep efficiency, slowwave sleep, apnea index and the satisfaction of the patient.

PATIENTS AND METHODS

The patients underwent a polysomnography twice, starting from April 1996 until June 1998, together with measurements of snoring sounds. One polysomnography was made before the use of the "SILENSOR", the second after the "SILENSOR" was adjusted. The patients filled in a sleep-questionnaire as well, in order to assess satisfaction with the device. The following parameters were compared using the T-test for Paired Samples; sleep efficiency (SE), slowwave sleep (SWS), apnea index (AI), loud snoring (LOUD), mild snoring (MILD) and total snoring (SNORE). The three latter parameters were expressed as percentage of total sleep time.

RESULTS

From April 1996 until June 1998 39 patients were diagnosed "snoring without Sleep Apnea Syndrome". Only 13 patients could be included in our trial. 26 patients dropped out, because of the following reasons:
- 10 because of the costs of € 600,-- which the insurance did not pay for
- in 5 cases the parameters were not complete
- 5 patients had a contraindication to adjust the "SILENSOR" such as a lack of enough own teeth.
- in one polysomnography there was a technical problem
- one patient had lost the "SILENSOR" on a holiday
- one patient divorced and did not wear the "SILENSOR" anymore, although he said he was satisfied with the device
- 3 patients did not show up, without a reason.
- 9 men and 4 women (mean age 51 years) completed the study.

The following results were found.

<table>
<thead>
<tr>
<th></th>
<th>before SILENSOR</th>
<th>with SILENSOR</th>
<th>Significance</th>
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<tbody>
<tr>
<td></td>
<td>x</td>
<td>sd</td>
<td>x</td>
</tr>
<tr>
<td>SE (%)</td>
<td>83,6 (10,3)</td>
<td>84,1 (6,1)</td>
<td>0,88</td>
</tr>
<tr>
<td>SWS (%)</td>
<td>21,2 (9,4)</td>
<td>15,9 (9,0)</td>
<td>0,14</td>
</tr>
<tr>
<td>AI (/hr)</td>
<td>2,7 (3,1)</td>
<td>3,0 (4,0)</td>
<td>0,8</td>
</tr>
<tr>
<td>SNORE (%)</td>
<td>50,1 (25,0)</td>
<td>23,1 (26,6)</td>
<td>0,07</td>
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<tr>
<td>LOUD (%)</td>
<td>30,5 (24,5)</td>
<td>19,7 (17,4)</td>
<td>0,14</td>
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<tr>
<td>MILD (%)</td>
<td>19,5 (17,0)</td>
<td>14,8 (11,8)</td>
<td>0,28</td>
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</table>

SE hardly changed, neither did AI. Total percentage of time with snoring sounds (SNORE) decreased. Statistical significance was at the p=0.07 level (probably due to the large standard deviation in the measurements). To our surprise SWS tended to decrease.

Subjectively 8 patients thought the "SILENSOR" had helped them and were satisfied.
3 Patients were neither very satisfied nor dissatisfied.
One patient said he could not sleep well with the "SILENSOR", which was surprising because in his case the SWS increased.
One patient was satisfied with the effect of the device on snoring, but he found the "SILENSOR" not comfortable to wear.
Only two patients thought negatively about the "SILENSOR".

CONCLUSIONS

We recommend to continue treatment of snoring with the "SILENSOR", in order to evaluate the effect of the device in a large number of patients. This could be facilitated if insurance companies would pay for such devices.
REFERENCES