

Treatment response of oral appliance therapy in positional sleep apnea

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Objective:

Treatment of obstructive sleep apnea (OSA) is individualized according to disease severity and causes, patient compliance, and socioeconomic consideration. In recent years, studies of positional dependency in OSA separated a subgroup of OSA called positional sleep apnea. Positional sleep apnea was defined as Apnea Hypoxia Index (AHI) >5, and supine AHI / non-supine AHI ratio \geq 2. For patients with positional sleep apnea, the ideal first-line treatment was still in debate. Our study aimed at evaluating the response rate of all positional apnea patients with oral appliance therapy (OAT) use as their first treatment.

Methods:

We retrospectively analyzed our patients with positional sleep apnea treated with mandibular advancement splints (MAS) in the past 5 years. Baseline polysomnography (PSG) was obtained in all patients, and Body Mass index (BMI), total sleep time of different positions, AHI (both supine and non-supine AHI) were recorded. Patients with supine or non-supine sleep time <15 minutes were excluded. After OAT started and stepwise adjustment for the amount of mandibular advancement, a follow up PSG was after 6 to 24 months. Treatment response was defined as complete response (AHI < 5/h), partial response (\geq 50% AHI reduction) or non-responsive (<50% AHI reduction).

Results:

A total 31 patients were enrolled in the study (28 male and 3 female, average age: 46 years, average BMI:27.8 kg/m², and average neck circumferences: 38.5 cm). According to OSA severity grading by AHI, 7 patients were mild, 14 patients were moderate, and 10 patients were severe. For OAT effectiveness, 27 patient (87%) showed AHI reduction>50%, and 17 patients (55%) showed complete response with AHI<5/h. Treatment responses were similar among groups of different severity. The 4 patients in non-responsive group all showed higher BMI and/or higher neck circumferences.

Conclusion:

OAT for patients with positional sleep apnea showed significant reduction of AHI, regardless of disease severity. Higher BMI or higher neck circumferences may associate with poorer effectiveness of OAT. To sum up, OAT is highly effective for OSA patients with positional sleep apnea and should be considered as a first-line treatment option.

中文題目：口內止鼾器對於姿勢性睡眠呼吸中止症的治療效果

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