Cracking the Code: Oral appliance therapy for treatment of Obstructive sleep apnea and snoring

Statement of the Problem: Sleep is the single most important physiologic state that affects the most number of systems overall and lack of sleep has serious health impacts, both in the short and long term. Nasal continuous positive airway pressure (CPAP) is the current treatment of choice, but its cumbersome nature makes tolerance and compliance less than optimal. This gives rise to the need for other alternatives that are equally effective, but more tolerable. There is growing interest in the use of oral appliances to treat snoring and OSA. The rationale is that advancement of the mandible and tongue and increased vertical dimension of occlusion and 3-dimensional jaw position has a positive impact on achieving airway patency.

Methodology & Theoretical Orientation: Oral Appliances have potential advantages over CPAP in that they are unobtrusive, make no noise, do not need a power source, are less costly and require less daily and periodic maintenance. Recent evidence from randomized controlled trials indicates that oral appliance therapy efficacy is up to 82% and perhaps even higher.

Findings: This is associated with a significant improvement in symptoms, including snoring, daytime sleepiness, increased overall general health and psychological well-being. This evidence is strong for short-term, and for long-term treatment of OSA with oral appliances. Whilst direct comparisons with CPAP indicate the superiority of CPAP overall, similar outcomes between the two treatments appear to be achieved in a substantial subgroup of patients. Patient acceptance has, in general, been in favor of oral appliances.

Conclusions and Significance: What were once key issues with oral appliance therapy included the inability to reliably predict treatment outcome and uncertainty about the selection of the appropriate ‘dosage’ of mandibular advancement required to control OSA in the individual patient have been addressed by the APP-NEA’s MAD-FIT protocol using big data quantitative analytics and predictive models.

Biography

Pankaj Singh a practicing dental surgeon, published author, academic researcher, professor and lecturer. Passionately dedicated to improving the lives of his patients as a clinician, he is also committed to serving his professional community through research and innovations that are pushing the fields of Dental Sleep Medicine forward to new and unexpected frontiers. He is dedicated to researching new avenues for sleep apnea treatment both in dentistry and sleep medicine and is a passionate advocate for developments in Dental Sleep Science. It is among his professional goals to improve the lives of those who struggle with sleep apnea and educate dentists on their role in a team approach to the treatment of snoring and obstructive sleep apnea. Never satisfied with the status quo, he is serving as a chief scientific officer at APP-NEA, a healthcare technology company has developed new technologies that will allow dentists to treat patients with OSA.

drpankajsingh@app-nea.com

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