

the same time the compliance rate is adequate and no significant side effects of OPT was observed for period of 1 month usage⁵⁴.

Oral appliances (OA) are simple and inexpensive devices for treatment of primary snoring⁵⁵ as well as mild to moderate OSA⁵⁶. The application of OA in the treatment of URTR is limited to several studies^{57 58 59}. The major effect of OA is accomplished by pulling forwards genioglossus muscle and other muscles of the oropharynx and hypopharynx, expanding antero-posterior dimensions of the pharynx and reducing resistance of URT. Tongue retaining devices (TRD) are made of soft plastic material, which hold on the tip of the tongue by vacuum, without advancing the mandibula, creating a seal with the lips and preventing the base of the tongue to fall backwards against the posterior pharyngeal wall during the sleep. TRD come in different sizes and are suitable for edentulous patients, patients with TMJD and patients with hypothyroidism which usually have macroglossia (owing to increased accumulation of mucopolysaccharides) and increased regional subcutaneous fat deposits. TRD side effects are minor and frequently are associated with tongue discomfort and excessive salivation⁶⁰. TSD are designed to treat mild to moderate OSA^{61 62}. Mandibular advancement devices (MAD) repositions the mandibula anteriorly with subsequent tongue protruding and changing position of the soft palate by pulling out palatoglossus muscle. MAD are fabricated either as a monoblock or consists of two separated parts with coupling mechanisms allowing different level of adjustment, variable mandibular movements in vertical and lateral directions and oral respiration. MAD requires preserved dentition and are not suitable for patients with TMJD. Nevertheless off-the-shelf devices are available on the market; the preferences are towards customizable MAD for reduction of patient discomfort and side effects. The most pronounced short term side effects are - dry lips, difficulties falling asleep, increased dental tenderness, hypersalivation, sore throat, pain in the temporomandibular joints, which are considered mild and transient⁵⁶. The long term side effects - broken / loosened teeth, periodontal complications, muscle spasms and occlusal changes appeared in the first 2 years of MAD usage⁶³. This requires regular visits to the dentist to perform frequent adjustments and to determine risk/benefits ratio for the patients and if it's necessary to recommend an alternative treatment. Even in cases with severe OSA, MAD are considered to be better alternative than TRD in addition to enhanced compliance and tolerability⁶⁴. Recently it has been reported that the SPT could be used as supplemental therapy to mandibular advancement devices in patients with POSA significantly improving the AHI reduction⁶⁵.

2. Conclusion

For the last years based on the extensive clinical investigations and critical data interpretation strict criteria for treatment of sleep-related breathing disorders have been delineated. Patients, who are not suitable for surgery or there are contraindication for operative therapy, should be referred for conservative treatment. CPAP therapy is believed to be a golden standard for conservative treatment of OSA. Nevertheless significant improvements and technological achievements have been implemented in the contemporary

CPAP equipment; the compliance rate is still low. Patients who don't tolerate CPAP therapy should consider wide spectrum of CPAP alternatives. The role of the otorhinolaryngologist as medical specialist who is intimately familiar with the anatomy of the URT and pathophysiology of OSA is essential and should direct patients to thorough sleep exam in the PSG lab in case a SDB is suspected. Based on the data collected from the physical examination and PSG results a critical estimation of patient's medical condition should be done. Considering the complexity of OSA, it is important that the ENT specialist builds up a useful therapeutic strategy combining different medical devices to ensure increased effectiveness and satisfactory compliance.

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