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Program Speaker – Su Jin Ahn

Title

Efficacy of Microsensors used in Oral Appliance for Obstructive Sleep Apnea

Abstract

Obstructive Sleep Apnea (OSA) is a disease in which sleep apnea and hypopnea occur more than 5 times per hour during sleep despite of breathing efforts, and the oxygen saturation in the body decreases by more than 4%. Prevalence is currently reported at 13~33% of men and 6~19% of women in the general population. OSA is mainly caused by obstruction of upper airway due to excessive soft tissues, abnormal anatomical structures, or neuromuscular dysfunction. OSA patients have a high probability of chronic inflammation, systemic disorders such as hypertension, cardiovascular and cerebrovascular complications because air flow is frequently interrupted and hypoxia may occur. Therefore, OSA is a disease that requires treatment. Oral appliances (OA) can be used effectively as correction of anatomical balance, specifically increasing velopharyngeal airway space to reduce collapsibility, and recent research has found that OA can change tongue muscle activity during sleep, with an augmentation of genioglossus muscle activity. OA has the advantage that it has higher compliance and is more convenient for the patient than continuous positive airway pressure. Since the OA is a device that the patient can wear and detach by themselves, objective measurement of compliance is necessary to get a successful treatment outcome. The most effective method that can measure compliance objectively is using a micro sensor. After TheraMon was first released as a sensor for OA in 2010, AIR AID SLEEP and DentiTrac were subsequently released and are now used as a tool for objective compliance or adherence monitoring of removable orthodontic appliances and OA for sleep apnea. Therefore, in this lecture, the operating principle and the clinical utility of micro sensors will be summarized based on the research results achieved so far and future development directions will be explored.

Biography

Dr. Su Jin Ahn is Professor of Department of prosthodontics, Kyung Hee University College of Dentistry, Kyung Hee University dental hospital at GangDong. She received DMD, MSD, PhD from Kyung Hee University College of Dentistry. She completed Intern and residency training in Department of prosthodontics, Kyung Hee University dental hospital. She worked as a Director, Department of prosthodontics, SahmYook university dental hospital and visiting scholar in sleep center of UCLA dental hospital. Dr. Su Jin Ahn has several publications in peer reviewed journals.