PREVALENCE OF SLEEP RELATED BREATHING DISORDERS IN A GREEK PAEDIATRIC POPULATION SEEKING ORTHODONTIC TREATMENT

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Introduction

Paediatric sleep disordered breathing (SDB) includes symptoms such as primary snoring, obstructive hypoventilation, upper airway resistance syndrome (UARS) and obstructive sleep apnea (OSA), with various prevalence in the general population.

The most common predisposing factors of paediatric SDB are adenotonsillar hypertrophy and obesity, while children with allergic rhinitis or craniofacial abnormalities such as micrognathia, retrognathia or midfacial hypoplasia are at great risk.

Clinical examination of a patient suspected for SDB requires assessment of the soft tissues of the oropharynx, which include the tongue, the uvula, the soft palate, the pillars and the tonsils, and the craniofacial structures

Several questionnaires have been developed to evaluate the possibility of SDB in otherwise healthy children, including the Paediatric Sleep Questionnaire (PSQ).

Excessive daytime sleepiness (EDS) is one of the most common reported complaints of patients with SDB. The Epworth Sleepiness Scale (ESS) is a self-administered questionnaire, asking subjects to rate on a 0-3 scale (no chance to high chance) how likely they would be to doze off or fall asleep in eight situations.

Objectives

The objective of the present study was primary to estimate the prevalence of SDB in children seeking orthodontic treatment, and secondary to estimate excessive daytime sleepiness and association of various anatomic factors (soft tissue and malocclusion severity) with these two conditions.

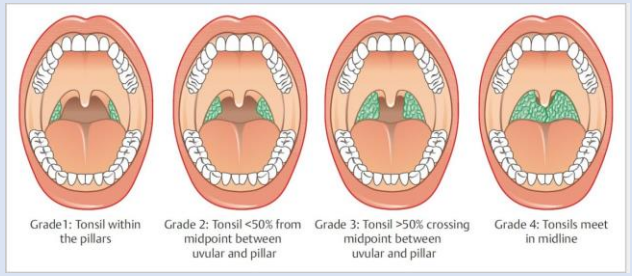
Materials and Methods

Data was collected from 222 patients (aged from 6.7 to 17.8 years) seeking orthodontic treatment in the Department of Orthodontics, Faculty of Dentistry, School of Health Sciences, Aristotle University of Thessaloniki, Greece. Patients from 6 to 18 years, native Greek speakers with native Greek speaker caregiver, were selected and asked to complete the Greek versions of the PSQ from the caregivers and two copies of the ESS-CHAD answered from both the caregivers and the patient.

During the orthodontic examination, the IOTN AC and DHC, the Brodsky tonsil grade, the Friedman tongue position and the Mallampati classification were recorded by the main investigator.

The exclusion criteria regarded adults, syndromic patients, comorbidities such as ADHD, asthma, sickle cell disease or objectively diagnosed OSA patients.

Figure 1. The Brodsky tonsil size grade



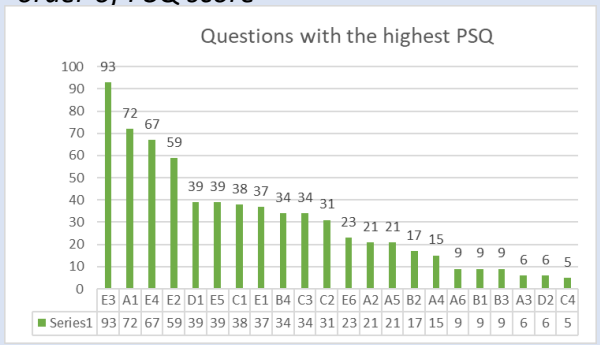
Results

219 questionnaires were returned completed. The mean age of the sample was 11.9 ± 2.5 years old, 103 were males and 99 females.

7.8% of the patients had a PSQ score ≥ 8, which indicates high risk for SDB (17 patients: 5 males, 12 females).

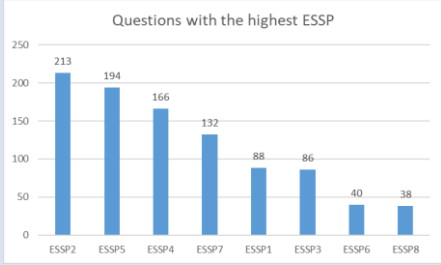
The most frequently positive answers in the PSQ regarded getting out of bed to urinate (93) and if the child ever snores (72).

Figure 2. Questions sorted in descending order of PSQ score



According to the caregivers' responses in the ESS-CHAD, 5.5% of the patients exhibited EDS (10 males, 2 females). According to the patients' responses, the percentage was 7.3% (9 males, 5 females). Only two patients with high risk for SDB had also EDS. The ESS-CHAD questions with the highest scores were about sitting and watching television or videos (213), laying down in the afternoon (194) and sitting in a car or bus for about half an hour (166).

Figure 3. Questions with the highest ESS score



Risk ratio analysis revealed that patients with high Brodsky tonsil grades (3 or 4) had 4.1 higher odds for SDB high risk.

Conclusions

7.8% of children and adolescents seeking orthodontic treatment seem to be at high risk for SDB, while 5.5-7.3% exhibit EDS. Increased tonsillar size was found to be associated with high SDB risk.

*All authors declare no conflict of interest