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Treatment of bruxism with hydroxyzine: preliminary data

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Abstract. – OBJECTIVE: Bruxism or sleep jaw clenching and grinding of the teeth is an unresolved area in dentistry, psychiatry, and medicine. While many therapeutic approaches are introduced, nearly all of them are not effective or some of them are invasive approach. Three children with sleep bruxism treated with hydroxyzine are reported.

STUDY DESIGN: The parents reported the severity of sleep bruxism in their children. All the children used to co-sleep with their parents. Hydroxyzine 10 to 25 mg per night was administered for all of the three patients. They were followed up for one to two months. None of them had any remarkable general medical condition or temporomandibular joint problem.

RESULTS: The parents reported a significant reduction in the score of Visual Analog Scale (VAS) after taking hydroxyzine for one month. Drug adverse effect was not reported or found.

CONCLUSIONS: These reports suggest that hydroxyzine may be effective for the treatment of bruxism in children. It is worthwhile conducting placebo-controlled studies investigating the possible role of hydroxyzine for the treatment of bruxism in children.

Key Words:
Bruxism, Hydroxyzine, Treatment.

Introduction

The non-functional involuntary habit of excessive teeth clenching or grinding is called bruxism[1]. The incidence rate of bruxism is 15.2%[2]. The prevalence rate of this gender related behavior in children aged 4 to 6 years is 55.3%[3] while its rate is 35.3% in children aged 7 to 10 years old[4]. Children usually used to bruxis in sleep. However, bruxism happening while they are awake is not uncommon.

Bruxism leads to the destruction of teeth or some other parts. The etiology of bruxism is not clear[5]. However, it is associated with nocturnal awakening, headache[6], temporomandibular disorders[7], stress[8], psychosocial disorders[9], and use of methamphetamine[10]. Meanwhile, the quality of life of children with sleep bruxism is not different from those without this parafunction[11]. Sleep bruxism in patient with psychiatric disorders is more than the healthy population. Moreover, its frequency is not related to any psychotropic drugs[12].

A recently published review article reported that there is no effective treatment with permanent effect[13]. Therefore, palliative approaches are recommended at present. It is expected that self-management of bruxism through self-relaxation reduces the frequency and intensity of awake bruxism. Occlusal adjustment of dentition and interocclusal appliances may be effective[13]. Although others reported that there is not sufficient evidence to state that the appliance is effective[14]. Propranolol is not effective[15]. Botulinum toxin injection may be effective[16,17]. Bromocriptine does not increase or decrease sleep bruxism[18]. Clonazepam decreases sleep bruxism[19,20]. There are some case reports that citalopram[21], paroxetine[22], fluoxetine plus buspirone induced sleep bruxism in an adolescent[23]. Meanwhile, buspirone treated Venlafaxine-associated nocturnal bruxism in a patient with depression[24]. Amitriptyline, an antidepressant medication, did not decrease sleep bruxism[25].

Finally, the treatment of sleep bruxism is an unresolved problem in dentistry, psychiatry and medicine. Moreover, the use of benzodiazepines in children for treatment of bruxism is somewhat problematic. For example, it may induce confusion, sleepiness, and dependency. Treatment with botulinum toxin is an invasive approach. In addition, palliative approaches such as interocclusal appliances are just an attempt to prevent damages due to bruxism. Therefore, introducing therapeutic approach especially applicable in children is highly required. In this retrospective medical record review, three children with sleep bruxism and their treatment with hydroxyzine are presented. Sleep bruxism as a symptom is diagnosed according to parental reports. It was diagnosed according to the classification criteria suggested by the American Academy of Sleep Medicine (AASM)[26]. There

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were three diagnostic criteria including: parent- reported audible night teeth grinding, lack of other mental or medical disorders (such as epilepsy in sleep, accounts of abnormal movements during sleep), and lack of other-reported sleep disorders (e.g. obstructive sleep apnea syndrome)[26].

Case 1

The patient is an 11 year old boy referred with severe night bruxism. He used to bruxism almost every night from more than one year ago. There was no remarkable general medical condition. He had experienced a febrile seizure at the age of 2 years old. The child and his father were interviewed face to face using K-SADS (27). There was not found any psychiatric disorder. The child used to co-sleep with his father. There was not any complaining about his teeth or temporomandibular joint. Hydroxyzine 10mg per night was administered and it was titrated up to 25 mg per night during 5 days. Visual Analog Scale (VAS) was used to measure the severity of bruxism. Its score range was from 0 to worse condition which was score 10. The fathers' reported score was 10 before the administration of the medication. The patient visited one month later. The score for severity of bruxism was 5. There was not any adverse effect.

Case 2

The patient is a 3 years and 10 months old boy. He co-sleeps with his parents. He used to bruxism since more than three months ago. According to his parent's report, he used to bruxism his teeth about 7 to 8 episodes in almost every night. There was not any complaint or finding about temporomandibular joint. No psychiatric disorder was detected. Hydroxyzine 5 mg per night was administered and titrated to 10 mg per night. In addition, nortriptyline 10 mg was administered. The patient and both parents were visited one month later. His father and mother reported a significant improvement. According to his father's report, the score of bruxism decreased from 10 to 2. However, according to his mother's report, it severity reached to 5. Then, nortriptilin was discontinued. However, the patient continued taking hydroxyzine as the past. The score for bruxism reached to 1 after two months from the administration of medication.

Case 3

The patient is an 8 year old boy referred for the treatment of bruxism. There was no psychiatric disorder or any remarkable general medical condition. He co-sleeps with his parents. He had been examined by a dentist without remarkable finding. He had taken imipramine 25 mg per night for the last one month. However, the VAS score did not markedly changed in the last month. Imipramine was discontinued and hydroxyzine 12.5 mg per night was administered. It was titrated up to 25 mg per night after 4 days. The score of VAS changed from 10 to 4 after one month taking of the medication. They did not report any side effect.

None of the three cases repotted any substance use, medication, and remarkable stress in the last few months. Mental retardation, tics, Tourette's syndrome, allergy, and sleep disorders were not found.

Discussion

All of these three cases with bruxism improved after taking hydroxyzine. This medical record review study suggests that it is worthy to investigate whether the administration of hydroxyzine is a safe and successful therapeutic approach for treatment of sleep bruxism at least in short term. In addition, there was not any report about the possible adverse effects of hydroxyzine. Treatment with hydroxyzine has some advantages over other current therapeutic approaches. Many therapies such as using appliances and bite-plate covering are just prevention for teeth wearing. Many other drugs such as fluoxetine not only do not improve bruxism but also they may worsen it. In addition, some treatment strategies are invasive approach. Moreover, contrary to benzodiazepines, there is not a risk of benzodiazepine dependency. Dry mouth, drowsiness, dizziness are among common an adverse effects of hydroxyzine; however, no adverse effects was reported.

"Directed muscular relaxation" reduces the signs of bruxism in children[28]. It is possible that clonidine and clonazepam reduce bruxism through their anxiolytic and muscle relaxation effects. Hydroxyzine is a H1 receptor antagonist. It is used for the treatment of anxiety in children with equal efficacy to chlorodiazopoxide[29]. This anxiolytic and anti-stress effects of hydroxyzine can be an explanation for its efficacy on bruxism.

It is clear that this is a report with isolated clinical cases. Therefore, these findings should not be generalized to other patients with bruxism. Future placebo-controlled studies are required to further evaluate the potential of hydroxyzine as a treatment in bruxism.

Conclusions

Although the mechanism of action is not clear, hydroxyzine is worthy of consideration for treatment of sleep bruxism.

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