



Herbal Remedies for Sleep Bruxism in Children

Deepa Gurunathan¹, Nivedhitha MS², Joyson Moses³, Mebin George Mathew⁴, Mahesh Ramakrishnan⁵

¹PhD Scholar, Department of Pediatric and Preventive Dentistry, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077, Tamilnadu, India, Email: deepag@saveetha.com

²Professor, Department of Conservative Dentistry and Endodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077, Tamilnadu, India, Email: nivedhitha@saveetha.com

³Professor, Department of Pediatric and Preventive Dentistry, Thai Moogambigai Dental College and Hospital, Mogappair, Chennai, India Tamilnadu, India, Email: joysonmoses@gmail.com

⁴Senior Lecturer, Department of Pediatric and Preventive Dentistry, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077, Tamilnadu, India, Email: mebingeorgem.sdc@saveetha.com

⁵Reader, Department of Pediatric and Preventive Dentistry, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077, Tamilnadu, India, Email: mahesh@saveetha.com

ABSTRACT

Bruxism is an oral habit consisting of involuntary rhythmic or spasmodic nonfunctional gnashing, grinding, or clenching of teeth, unlike chewing movements of the mandible, that leads to occlusal trauma. The use of herbal medicine, as one element of complementary and alternative medicine, is increasing worldwide and the herbal management of bruxism is in its nascent stage. Herbal therapy is a natural substance that relieve symptoms of the body by restoring it and consequently improving the general health. Aroma oils lower heart rate and blood pressure, are anti-inflammatory, analgesic, antispasmodic, induce sleep, strengthen blood vessels, or prevent nerve damage. This article looks into the various treatment and adjunct herbal management of bruxism in children

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INTRODUCTION

Bruxism is an oral habit consisting of involuntary rhythmic or spasmodic nonfunctional gnashing, grinding, or clenching of teeth, unlike chewing movements of the mandible, which may lead to occlusal trauma[1]. Bruxism has two distinct circadian manifestations: it can occur during sleep (indicated as sleep bruxism) or during wakefulness (indicated as awake bruxism) [2]The most dangerous form of this pathology is night bruxism, which has a psychoemotional and occlusal origin. If untreated, it leads to damage of the teeth, periodontium and oral mucosa, pathology of the muscles constituting the masticatory system, headache and cervical pain, temporomandibular, and hearing disorders [3].Although bruxism is not a life-threatening disorder, it can influence the quality of human life [1,3]

The number of patients seeking treatment because of temporomandibular disorders and oral parafunctions is increasing, which may confirm a correlation between these conditions and a

growing number of chronic stressors in highly developed societies. The prevalence of these problems is seen to be higher in the younger population [4]. Bruxism can lead to dental wear, jaw muscle pain and fatigue, and temporal headaches, and in some severe forms can compromise oral functions such as chewing, speaking, and swallowing [5]. However, no direct relationship has been observed between the type of bruxism, the severity, and the presence of additional clinical signs and symptoms. In fact, it has been reported that patients with frequent sleep bruxism are less prone to complain about fatigue and pain in the masticatory muscles than the patients with fewer masticatory events per night[6]. The diagnosis of sleep bruxism is usually based on an interview, clinical examination, and objective polysomnography. The most common method for diagnosing bruxism in children is parental reports of grinding the teeth. However, detection is often impeded by a lack of prior knowledge regarding bruxism [2,4]

Clinical studies suggest that stress is the main reason for patients to seek medical advice. This is also confirmed by the large number of medicines used in order to treat stress related problems in western countries such as antidepressants, anxiolytics, and hypnotics, which decrease arterial blood pressure and the level of cholesterol [7,8]. The use of herbal medicine, as one element of complementary and alternative medicine, is increasing worldwide. The herbal management of bruxism is in its nascent stage[9]. The aim of this article is to review herbal strategies which can be used for sleep bruxism

Prevalence of Sleep Bruxism

Epidemiological studies showed that bruxism can be seen in all age groups but more common in the young population [10-12]. The literature reports prevalence rates of bruxism in children ranging between 14% and 20% while in adults ranging between 6% and 8% and it decreases with age. [13] Fonseca found the prevalence to be 15.29%[11] whereas Serra Negra found the prevalence to be as high as 35.3% [12] Some researchers report that bruxism is more prevalent in boys [10]

Management of Sleep Bruxism

In the absence of a causal treatment, the management of bruxism focuses to prevent progression of dental wear, reduce teeth grinding sounds, and improve muscle discomfort and mandibular dysfunction in the most severe cases. Counselling and behavioral strategies, splint therapy, medications, and contingent electrical stimulation have shown heterogeneous results. [1,4,8,9]

Sleep hygiene measures

The treatment of sleep bruxism usually begins with counselling of the patient with regard to sleep hygiene.[14-16] This includes stop smoking and drinking of coffee or alcohol at night, limit the physical or mental activity before going bed, and ensure good bedroom conditions[18-21]

Splint therapy

Occlusal splints have been considered as the first-line strategy for preventing dental grinding noise and tooth wear in primary sleep bruxism. In general, the design of the device is simple, covers the whole maxillary or mandibular dental arch, and is well tolerated by the patient. [22-29]. However, its efficacy reducing the number of masticatory episodes per hour of sleep seems to be transient, with a maximal effect observed during the first 2 weeks, and returning to baseline after longer periods of use [30-32].

Contingent electrical stimulation

In the last years, contingent electrical stimulation (CES) has reappeared in an attempt to reduce the masticatory muscle activity associated to sleep bruxism. The rationale for CES consists in the inhibition of the masticatory muscles responsible of bruxism[8,9] applying a low-level electrical stimulation on the muscles when they become active, i.e. during the bruxism episode. Two experimental studies have applied CES in patients with signs and symptoms of sleep bruxism and myofascial pain, and found a reduction of the EMG episodes per hour of sleep while using CES, but with no changes in pain and muscle tension scores [5,12]

Pharmacological therapy

Most of the drugs investigated for treating sleep bruxism were used in experimental studies of small sample size and in which the effects were solely evaluated after very short treatment periods using the medication.[33-36] Mohamed et al. reported the first RCT evaluating amitriptyline (used during 7 days) in a group of patients with sleep bruxism and temporomandibular disorder symptoms, and found no changes in pain reports and in the nocturnal masseteric muscle activities with the therapy.[37] Other pharmacological therapies such as bromocriptine and propranolol have also been investigated, but again failed to show positive results[40]

Herbal Options

Among the herbal medicines used to treat sleep bruxism, *Phytolacca decandra* 12c and *Melissa officinalis* 12c are the most commonly used. The first is indicated for grinding and biting of teeth and the second is indicated for anxiety. Although these herbal medicines are used to treat sleep bruxism in children, there is no support in the dental literature for their effectiveness when used in a combined way [9,41]

Herbal therapy is a healing system that makes use of natural substances that relieve symptoms of the body by restoring it and consequently improving the general health.[10] In addition, it is accessible, sustainable, and safe, even for children, because it can be controlled as long as necessary, with no side effects.[10] Therapeutic setting and monitoring adjusted according to the patient's symptom results in improvement of quality of life along with herbal therapy. Although the prescription of *P. decandra* 12c close to bedtime improves the patient's grinding, it has also resulted in more episodes of nightmares; thus, the introduction of *M. officinalis* 12c will also be necessary to restore sleep, eliminating completely other symptoms such as nail biting and parasomnias. [9]

The use of aromatherapy is a popular approach to treat bruxism symptoms and urges. The best essential oils for teeth grinding include lavender, roman chamomile, ylang-ylang, juniper berry, and peppermint [32-37]

Some common properties found in these oils lower heart rate and blood pressure, are anti-inflammatory, analgesic, antispasmodic, induce sleep, strengthen blood vessels, or prevent nerve damage [9]. Essential oils can't replace a mouthguard but will help alleviate pain and tension. [42]. Hence any of the above mentioned techniques will need to be used in combination for best results.

There are no drug treatments on bruxism that combine the continuous use of a medicine with no side effects in the literature. Hence the use of complementary medicine like herbal therapy can help in treating sleep bruxism

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