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# NOVI TERAPIJSKI PROTOKLI U LEČENJU PACIJENATA SA BRUKSIZMOM

## NEW THERAPEUTIC PROTOCOLS IN THE TREATMENT OF PATIENTS WITH BRUXISM

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#### Sažetak

Pitanja bruksizma i poremećaja temporo-mandibularnog zgloba (TMZ), često su zanemarena. Bruksizam, može dovesti do značajnih stomatoloških i zdravstvenih problema. Protokoli tradicionalne terapije koje je predložilo nekoliko autora u Vašem časopisu uključujući tvrde i meke elastične udlage (noćne štitnike) pre i posle protetske rehabilitacije ne predstavljaju najefikasniji savremeni tretman. Tretman botulinskim toksinom dovodi do inhibicije mišićne kontrakcije i smanjujenja bola i nelagodnosti. Bihevioralna terapija može igrati ključnu ulogu u identifikaciji okidača i upravljanju stresom, koji su često u etiologiji bruksizma.

Ključne reči: bruksizam, temporomandibularne disfunkcije, botulinski toksin

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#### Abstract

Issues of bruxism and temporomandibular joint disorders (TMJ) are often neglected. Bruxism can lead to significant dental and health problems. Traditional therapy protocols proposed by several authors in your journal including hard and soft elastic splints (night guards) before and after prosthetic rehabilitation do not represent the most effective modern treatment. Botulinum toxin treatment inhibits muscle contraction and reduces pain and discomfort. Behavioral therapy can play a key role in identifying triggers and managing stress, which are often at the etiology of bruxism.

Key words: bruxism, temporomandibular joint disorders, Botulinum toxin

2024 Faculty of Medicine in Niš. Clinic of Dental Medicine Niš. All rights reserved / © 2024. Medicinski fakultet Niš. Klinika za dentalnu medicinu Niš. Sva prava zadržana. Dear Editor,

Temporomandibular disorders (TMD) after dental pain are the most common cause orofacial pain. It may affect of approximately 70-80% of the adult population between the age of 20 and 45, which makes it a public health concern. It is important to bring attention to the oftenoverlooked issues of temporomandibular disorders and bruxism. which are prevalent, increasingly vet frequently misunderstood<sup>1</sup>

Parafunctional behaviors are common activities that can apply very high masticatory forces in teeth, implants, and dental prostheses. These forces can lead to fracture or loosening of screws and abutments, chipping of the veneering material, or fracture of the prosthetic reconstruction<sup>2</sup>.

Bruxism as parafunction with involuntary grinding or clenching of teeth, can also lead to other significant dental and health problems, including worn teeth,  $pain^3$ . headaches. jaw and Despite continuous efforts to understand the nature and mechanisms, an exact pathophysiology remains unclear. Many factors were associated with bruxism including anatomical abnormalities, tooth interference in dental occlusion, psychological factors, sleep disorders, genetics, and medication side effects. Recent studies suggest that parafunctional behaviors develop due to central regulatory mechanisms<sup>4</sup>.

Many individuals may not even be aware they suffer from this condition, as it often occurs during sleep or periods of stress. Moreover, TMJ disorders, which can arise from bruxism and other parafunctional habits, can cause pain, discomfort and dysfunction in the jaw joint, impacting daily activities such as eating and speaking. The implications of this disorder are farreaching, not just for dental health but for overall well-being and quality of life<sup>5</sup>.

Due to its multifactorial etiology and severity of the symptoms, the suggested traditional therapy protocols by several authors including hard and soft elastic splints (night guards) before and after prosthetic rehabilitation do not present the most effective treatment<sup>6</sup>. Splints help to protect the teeth from damage and can alleviate pressure on the jaw muscles. They create a barrier between the upper and lower teeth, reducing the effects of grinding. They can provide some relief, but may not always be sufficient for severe cases because splints muscle activity do not address the contributing to teeth grinding'.

This is where neuromodulators like Botulinum toxin come into play. Botulinum toxin is a bacterial-derived extract that acts at neural synapses by inhibiting the uptake of acetylcholine by neurons, thus causing inhibition of muscle contraction, and diminishing pain and discomfort. The toxin is injected into masticatory muscles (masseter and temporalis) to treat trismus, bruxism, masticatory muscle myalgia, temporomandibular joint disorders or muscle hypertrophy.

In addition to its effectiveness, Botox therapy for bruxism is minimally invasive and can be administered in a dental or medical office, often with little to no recovery time.

As awareness of this treatment grows, dental professionals and patients alike need to consider it as a viable option for managing bruxism, especially for those who have not found relief through other traditional methods<sup>8</sup>.

Of course, for our severe and chronic patients, it is crucial to adopt an approach that incorporates behavioral therapy, medications, lifestyle changes, and physical therapy. Behavioral therapy can play a pivotal role in identifying triggers and managing stress, which are often at the root of bruxism. Additionally, pharmacotherapy may be necessary for some individuals to alleviate muscle tension and anxiety associated with bruxism. Lifestyle modifications such as reducing caffeine and alcohol consumption, and implementing good sleep hygiene practices, can significantly mitigate symptoms<sup>9</sup>.

Over the past years, treating TMD and bruxism have evolved to a dynamic field of macromolecules, natural products, and novel functional materials. Nature derivatives with anti-inflammatory and analgesic effects like Lectins, extracts from plants and algae, sulfated polysaccharides, terpene, resveratrol, cocoa were classified as "generally safe" products from the FDA<sup>10</sup>.

I urge dental professionals to incorporate screenings for bruxism and TMJ routine dental disorders into visits. Additionally, more community education initiatives should be developed to inform individuals about the signs, symptoms, and potential treatment options available. Addressing these issues can improve the quality of life for many affected individuals.

Thank you for your attention to this important topic.

Sincerely,

Prof. dr Aneta Mijoska

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