THE ROLE OF "TANTUM VERDE" IN THE COMPLEX OF PREVENTIVE MEASURES FOR THE PREVENTION OF CATARRHAL GINGIVITIS DURING ORTHODONTIC TREATMENT

Mukhayyo K. Kuchkarova - Ph.D.
Marifat D. Abdusamatova - master's student
Javlonbek B. Tadjiyev - assistant
Tashkent State Medical University (Tashkent, Uzbekistan)

Abstract. *The significance of prophylaxis for inflammatory periodontal diseases during orthodontic treatment increases every year, as the number of patients using bracket systems and other orthodontic appliances steadily grows. This is due to both the improvement of bite correction methods and dental arch alignment, as well as the growing aesthetic and medical demands of the population for the condition of the dentoalveolar system. Catarrhal gingivitis, being the most common form of inflammatory gum lesion, requires special attention, as its course is significantly complicated in the presence of orthodontic structures. There is a need for a systematic and comprehensive approach to the prevention of this disease using modern drugs, among which "Tantum Verde" stands out.*

Keywords: *catarrhal gingivitis, orthodontic treatment, bracket system, prevention, Tantum Verde, benzydamine hydrochloride, gingival inflammation, oral cavity, antiseptic, oral hygiene, periodontium, anti-inflammatory agent, dentistry, adolescents, individual prevention.*

Introduction. Preventive measures during orthodontic treatment have specific characteristics associated with an increased area of dental plaque retention, the formation of additional hard-to-reach zones for conventional oral hygiene products, as well as mechanical irritation of the oral mucosa. Brackets, ligatures, locks, arches, and elastics complicate the complete mechanical cleaning of the tooth surfaces and alveolar processes. This process is also facilitated by changes in the composition of saliva due to the presence of foreign bodies in the oral cavity. As a result, microbial plaque accumulates more rapidly, which increases the risk of inflammatory changes in the gingival and periodontal tissues.

Catarrhal gingivitis is characterized by the appearance of pronounced signs of inflammation in the marginal and attached gingiva: swelling, hyperemia, pastosity, increased bleeding, discomfort, tenderness during pressure or food intake, and sometimes itching. Despite its seemingly mild course, untreated catarrhal gingivitis can serve as a triggering factor for the development of more severe forms of periodontal pathology, including periodontitis, which may negatively affect the outcomes of orthodontic treatment and may even lead to its discontinuation [1].

Materials and methods. A comprehensive system of preventive measures during orthodontic interventions begins with detailed instruction of the patient regarding personal oral hygiene. However, dental practice shows that mechanical tooth brushing alone, even when using special orthodontic toothbrushes, interdental brushes, single-tuft brushes, and floss, is often insufficient to prevent inflammatory processes. Therefore, modern medicinal agents with antiseptic and anti-inflammatory properties are becoming increasingly relevant.

Among such agents, the drug Tantum Verde occupies a special position. The use of Tantum Verde is based on the mechanisms of action of its main active ingredient — benzydamine hydrochloride, which has pronounced antiseptic, antimicrobial, and anti-inflammatory properties. The main pharmacological activity of the drug is realized through the suppression of prostaglandin synthesis, stabilization of cell membranes, inhibition of the production of pro-inflammatory mediators, and reduction of vascular permeability.

This provides rapid relief of acute inflammatory manifestations and prevents their chronicity without the development of serious side effects, which is particularly important in adolescent practice

and during long-term therapy. Tantum Verde is easily integrated into individual hygiene programs for orthodontic patients due to the availability of multiple dosage forms: mouth rinse solution, topical spray, and lozenges.

The solution is recommended for mouth rinsing two to three times a day, ensuring uniform contact of the active substance with the most vulnerable areas of the mucosa. The spray is convenient for targeted application directly onto inflamed areas of the gingiva, while the lozenges provide prolonged contact of the active substance with the epithelium even when the patient is outside the home or in an educational institution [2].

Results. A comprehensive approach to the prevention of catarrhal gingivitis necessarily includes regular professional hygiene visits to the dentist, during which soft and hard dental deposits are removed, orthodontic structures are treated, and the condition of the periodontal tissues is monitored. At each stage of observation, there is a need for additional medicinal agents to reduce the inflammatory response of tissues, decrease gingival sensitivity, and prevent secondary infection.

Tantum Verde, possessing combined antiseptic and anti-inflammatory properties, meets these requirements and enhances the therapeutic and preventive effects of traditional methods such as saline rinses, chlorhexidine application, and herbal infusions.

Experience with the use of Tantum Verde as part of comprehensive preventive measures during orthodontic treatment indicates a significant reduction in the frequency of exacerbations of catarrhal gingivitis, a decrease in the severity of pain syndrome, and a reduction in patient complaints of discomfort, swelling, and gingival bleeding.

With systematic use of the drug, accelerated restoration of the gingival epithelial structure is observed, prevention of microtrauma to the mucous membrane during prolonged contact with elements of the bracket system is achieved, and the risk of progression of catarrhal gingivitis into hypertrophic or ulcerative forms is reduced.

The broad spectrum of action and high tolerability of Tantum Verde are explained by the minimal systemic absorption of benzydamine hydrochloride and the absence of mutagenic, teratogenic, and carcinogenic effects, which is especially important for adolescents and individuals with chronic comorbid conditions. The safety and high efficacy of the drug have been proven in various age groups. Tantum Verde can be used both for preventive and therapeutic purposes, which significantly expands the possibilities for orthodontists when choosing an individual patient management strategy [3].

The systematic implementation of Tantum Verde in preventive programs is accompanied by a reduced need for systemic antibiotic therapy and a decrease in the number of complications associated with oral dysbiosis and mucosal irritation. It is important to note that the correct use of the drug prevents the development of microbial resistance, which helps maintain its effectiveness during long-term treatment courses and repeated preventive cycles. This is especially relevant during orthodontic treatment, which often lasts more than 1–2 years.

Tantum Verde is characterized by high pharmaceutical stability, does not change its properties under the influence of saliva or the oral microflora, does not damage orthodontic construction materials, and does not cause tissue irritation at recommended dosages. The use of the drug does not require special preparation, takes minimal time, and is well tolerated by patients of different ages, including children and the elderly, as well as individuals with allergies to other medications.

Incorporating Tantum Verde into the individual hygiene routine of patients undergoing orthodontic treatment significantly reduces psycho-emotional discomfort associated with gingival inflammation, provides preventive effects against pain development, facilitates adaptation to braces and other orthodontic constructions, and improves overall patient comfort. With adequate patient education on oral hygiene rules, regular use of the drug, and timely dental visits, it is possible to maintain a high quality of life and avoid serious complications that could threaten the success of treatment [4].

Discussion. It is also important that, unlike some other anti-inflammatory and antiseptic agents, Tantum Verde does not alter taste perception, does not stain tooth enamel, does not dry the mucous membrane, and does not cause a burning sensation when contacting exposed epithelial areas. This allows the drug to be included in long-term preventive programs for catarrhal gingivitis without the risk of patient refusal to continue preventive measures.

Special attention should be given to monitoring the condition of the oral cavity throughout orthodontic treatment. Regular use of Tantum Verde contributes to faster elimination of inflammatory changes in gingival tissues at early stages, making the prevention of catarrhal gingivitis more effective.

The orthodontist can flexibly adjust the frequency and duration of the drug's use depending on the dynamics of the patient's gingival condition without fear of side effects or deterioration of treatment quality due to the negative impact of medications.

Effective prevention of catarrhal gingivitis using Tantum Verde is particularly important for adolescents and young patients whose periodontal tissues are still developing, and inflammatory diseases may lead to serious anatomical and functional disorders. The use of modern topical agents with proven effectiveness ensures not only the preservation of periodontal health but also increases patients' responsibility for their own health by forming habits of independent control over the treatment process [5].

Conclusion. It is important to emphasize that the inclusion of Tantum Verde in comprehensive preventive care does not eliminate the need for regular professional hygiene procedures and adjustment of the individual treatment plan in case new inflammatory foci appear. Only a balanced and rational preventive approach allows achieving maximum results with minimal risks for the patient.

Modern trends in orthodontics and dentistry are aimed at the most careful and gentle treatment of oral tissues, prevention of chronic inflammatory processes, reduction of adaptation periods, and acceleration of rehabilitation after complications.

The increasing number of patients using orthodontic appliances requires expansion of the arsenal of safe and effective means for the prevention of catarrhal gingivitis, among which Tantum Verde occupies a worthy place due to its unique mechanism of action, high efficacy, and safety.

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