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OPTIMIZATION OF COMPLEX THERAPY FOR CHRONIC GENERALIZED CATARRHAL GINGIVITIS

Tursunova Gulnoza Jamshidovna
https://orcid.org/0000-0002-1990-1488
Bukhara State Medical Institute named after
Abu Ali ibn Sino 23 Gijduvan Street, Bukhara, Uzbekistan
Tel.: +998 (95) 911-00-50 info@bsmi.uz

Abstract: This study presents the results of treatment and prevention of chronic catarrhal gingivitis. The inclusion of a plant-based mouth rinse in a set of individual oral hygiene measures ensured its antiseptic and anti-inflammatory effects. In addition, the mouth rinse contains fluoride, which has an anti-caries effect, allowing its recommendation for daily prevention of periodontal diseases and dental caries.

The study involved 40 patients aged 18–28 years diagnosed with chronic generalized catarrhal gingivitis. They were divided into two groups: the control group (20 patients) received standard therapy, while the main group (20 patients) received standard therapy combined with the mouth rinse. Analysis of the results demonstrated the clinical effectiveness of including the mouth rinse in individual hygiene measures, showing a positive impact on reducing the duration of inflammatory processes in the periodontium.

Daily use of the mouth rinse based on plant components and fluoride limits the proliferation of pathogenic plaque microflora and creates conditions for prolonged remission of catarrhal gingivitis.

Keywords: periodontal diseases, chronic catarrhal gingivitis, oral hygiene.

Introduction

Inflammatory periodontal diseases remain one of the most challenging issues in modern dentistry. Despite improvements in dental care, the prevalence of gingivitis and periodontitis remains significant, negatively affecting quality of life [1, 2, 5, 14]. According to WHO data, 64–98% of the population aged 35–44 suffer from gingivitis and periodontitis [6, 12, 15]. In Russia, periodontal pathology is observed in 60–98% of examined individuals across different age groups, with the prevalence of gingivitis in adolescents reaching 83–98% [8, 13].

The primary factor in the development of gingivitis is microorganisms that manifest their pathogenic properties against the background of poor oral hygiene and reduced body resistance [3, 4, 7]. Therefore, adequate and timely treatment and prevention of gingivitis is a key factor in preventing the development of inflammatory periodontal diseases [9, 11]. Effective oral hygiene is a critical component in the treatment and prevention of chronic catarrhal gingivitis [6, 10, 11].

Mouth rinses based on plant extracts have demonstrated high efficacy in preventing inflammatory periodontal diseases. These rinses are intended to be incorporated into a comprehensive regimen of individual hygiene measures, alongside toothpaste, toothbrushes, dental floss, and other hygiene aids. The rinse is an original composition designed for oral care and eliminating halitosis. Its components include: water, ethanol, phenyl salicylate, macrogol glycerol oleate, sage oil, mint oil, thymol, clove oil, eugenol, sodium dihydrophosphate, hydrochloric acid, and sodium fluoride. The mass fraction of fluoride is 0.01% (F), and ethanol content is 60%. The plant components provide antiseptic and anti-inflammatory effects, while

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fluoride ensures cariostatic properties, supporting its use for daily prevention of both periodontal inflammation and dental caries.

Objective: To improve the efficacy of treatment and prevention of chronic catarrhal gingivitis through the inclusion of a plant-based fluoride-containing mouth rinse in a regimen of individual oral hygiene measures.

Materials and Methods

The study included 40 patients aged 18–28 diagnosed with chronic generalized catarrhal gingivitis. Participants were divided into two groups: a control group (20 individuals) receiving standard therapy, and a main group (20 individuals) receiving standard therapy plus the mouth rinse as part of individual oral hygiene.

For professional oral hygiene, 15–30 drops of the rinse concentrate were diluted in 1/3 cup (50 mL) of warm water and used twice daily (morning and evening) after tooth brushing. Diagnosis of periodontal diseases was performed according to the classification adopted at the XVI Plenum of the All-Russian Society of Dentists (1983) and ICD-10. Comprehensive clinical and instrumental examinations were conducted, including the determination of index scores: OHI-s (Green J.C., Vermillion J.R., 1964), Muhlemann (modified, Cowell R. et al., 1975), Flesar T.J. (1980), PMA (Parma, 1960), PI (Russel A.L., 1956), as well as radiographic examination of the dentoalveolar system.

At the first visit, patients were instructed in standard tooth brushing techniques, their hygiene tools were assessed, and recommendations for selection and use were provided. Individual hygiene control and clinical examination were performed using indices at 5, 10, and 30 days. Further follow-up was conducted 2 and 6 months after treatment.

Figure 1. *Patient M., 20 years old. Chronic catarrhal gingivitis. Positive Shiller–Pisarov test. Heavy dental plaque deposition.*

Analysis revealed that 82% of patients had low hygiene levels due to bleeding gums during brushing, as most patients brushed irregularly, resulting in plaque accumulation and progression of the inflammatory process. High hygiene index values were observed across all study groups, with no significant differences between them (control group: OHI-s = 2.33 ± 0.21; main group: OHI-s = 2.51 ± 0.22). Clinical signs such as gingival swelling, hyperemia, and tenderness on palpation were recorded. Positive Shiller–Pisarov tests confirmed the presence of inflammation.

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PMA and Muhlemann indices prior to treatment indicated moderate inflammation and showed no significant differences between groups. No pathological changes in bone tissue were observed on orthopantomograms.

Results

In the main group, use of the mouth rinse resulted in faster resolution of catarrhal inflammation symptoms. Pain subsided within 6.7 ± 0.67 days in the main group compared to 9.2 ± 1.38 days in the control group. No allergic reactions or adverse effects were noted. Index scores also showed positive dynamics, with no significant differences 10 days after treatment.

Patients who used the rinse daily as part of their hygiene regimen demonstrated the best oral hygiene index values at 2 months (OHI-s = 0.41 ± 0.12) and 6 months (OHI-s = 0.49 ± 0.15) post-treatment, significantly better than the control group (OHI-s = 1.31 ± 0.22 and 1.70 ± 0.30, respectively; $p < 0.05$). Good oral hygiene and daily rinse use contributed to the resolution of periodontal inflammation, confirmed by negative PMA indices over 6 months and long-term remission.

In the control group, oral hygiene worsened at 2 and 6 months (OHI-s = 1.71 ± 0.15 and 2.11 ± 0.18), leading to gingivitis exacerbation in 20% of patients at 2 months (PMA = 19.23 ± 1.20%) and 25% at 6 months (PMA = 23.11 ± 2.18%).

Figure 2. *Patient M., 20 years old. Intact periodontium. 60 days after treatment of catarrhal gingivitis. Daily use of mouth rinse.*

Conclusions

The inclusion of a plant-based fluoride-containing mouth rinse in individual hygiene measures positively affects the course of chronic catarrhal gingivitis, reducing the duration of inflammation and significantly decreasing clinical signs. Daily use suppresses pathogenic plaque microflora, creating conditions for long-term remission. The demonstrated clinical efficacy supports recommending this rinse as a hygiene product for oral care in patients with inflammatory periodontal diseases.

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