

Modern Methods Of Treatment Of Chronic Generalized Periodontitis

Yigitaliyeva Khilola Muhammadjon kizi
Assistant Central Asian Medical University.
https://orcid.org/0009-0000-4965-8442
e.mail: xilolayigitaliyeva1@gmail.com.

Abstract. Chronic generalized periodontitis (CGP) is one of the most common inflammatory-destructive periodontal diseases, leading to progressive loss of supporting tooth tissues and their premature loss. Modern treatment methods for CGP are aimed at eliminating microbial biofilm, controlling the inflammatory process, and restoring periodontal tissues using both conservative and surgical approaches. The aim of the study was to evaluate the effectiveness of complex treatment of chronic generalized periodontitis using modern ultrasonic, antimicrobial, and regenerative methods. It was established that the combined approach provides a statistically significant reduction in inflammatory indices, improvement of periodontal clinical status, and stabilization of the pathological process.

Keywords: Chronic generalized periodontitis, periodontology, ultrasonic therapy, antiseptics, laser therapy, regenerative medicine.

Relevance. Chronic generalized periodontitis occupies a leading place among periodontal diseases and is one of the main causes of tooth loss in the adult population [1-4].

According to epidemiological studies, the prevalence of periodontitis of varying severity reaches 60–90% in individuals over 35 years of age. The disease is characterized by a long-term inflammatory process and destruction of the periodontium and alveolar bone [5, 6].

Modern trends in periodontology are aimed at the use of minimally invasive and highly effective treatment methods, including ultrasonic scaling therapy, photodynamic therapy, laser exposure, local antimicrobial therapy and regenerative technologies using membranes and bone substitutes [7, 8].

Purpose of the study. To evaluate the clinical effectiveness of modern methods of treating chronic generalized periodontitis based on the dynamics of clinical and index indicators.

Material and research methods. The study included 180 patients aged 30 to 60 years diagnosed with moderate chronic generalized periodontitis. The study was conducted at the Central Asian Medical University.

The patients were divided into two groups: the main group (n=90) – complex treatment using ultrasonic scaling, antiseptic therapy, laser exposure and local application of antibacterial gels; the control group (n=90) – traditional mechanical removal of dental plaque and standard antiseptic therapy.

The effectiveness was assessed based on the following parameters: gingivitis index (GI), periodontal index (PI), periodontal pocket depth, clinical attachment level.

Statistical data processing was performed using SPSS Statistics 27.0. Results are presented as $M \pm m$. Student's t-test was used to assess the significance of differences. Correlation analysis was performed using Pearson's r, with statistical significance at $p < 0.05$.

Results and discussion. The results of the study showed that patients in the main group who received complex treatment using modern technologies showed a statistically significant improvement in all clinical indicators of periodontal status (Table 1).

Table 1
Dynamics of clinical indicators of periodontitis ($M \pm m$)

Indicator	Control group	Main group	p
GI (before treatment)	2,1±0,1	2,2±0,1	>0,05
GI (after treatment)	1,6±0,1	0,9±0,1	<0,001
PI (before treatment)	3,4±0,2	3,5±0,2	>0,05
PI (after treatment)	2,8±0,2	1,4±0,1	<0,001

Pocket depth (mm)	4,8±0,3	3,2±0,2	<0,001
Attachment loss (mm)	3,9±0,2	2,1±0,1	<0,001

The most pronounced change was noted in the gingivitis index, which decreased to 0.9 ± 0.1 , indicating a significant reduction in the inflammatory process. In the control group, the decrease was less pronounced and amounted to 1.6 ± 0.1 .

A similar trend was observed for the periodontal index: in the main group the indicator decreased by almost 2.5 times, while in the control group it decreased only slightly.

The depth of periodontal pockets decreased to 3.2 ± 0.2 mm in the main group versus 4.8 ± 0.3 mm in the control group, which reflects a more pronounced effect of complex therapy on the stabilization of periodontal tissues.

A strong negative correlation was established between the use of complex therapy and the depth of periodontal pockets ($r = -0.78$; $p < 0.001$), as well as between the level of inflammation and clinical attachment ($r = -0.74$; $p < 0.001$). This confirms the effectiveness of modern treatment methods in stabilizing the pathological process.

The data obtained confirm the high effectiveness of a comprehensive approach to treating chronic generalized periodontitis. The use of ultrasonic root surface treatment, laser therapy, and topical antiseptics significantly reduces the microbial load and inflammatory activity [9, 10].

Comparison with traditional treatment methods showed that modern technologies provide a more significant reduction in the depth of periodontal pockets and improvement in clinical indices.

The results are consistent with modern research indicating the importance of a combined approach in periodontology.

Conclusions:

1. Modern methods of treating chronic generalized hypertension provide a more pronounced clinical effect compared to traditional therapy;

2. Comprehensive treatment significantly reduces inflammatory indices;

3. A reduction in periodontal pocket depth and attachment stabilization are observed;

4. Laser and ultrasound therapy have been shown to be highly effective;

5. A comprehensive approach is the most promising approach in periodontitis treatment.

References:

1. Lindhe J., Lang N.P., Karring T. Clinical Periodontology and Implant Dentistry. – 6th ed. – Oxford: Wiley-Blackwell, 2015. – 1480 p.
2. Newman M.G., Takei H.H., Klokkevold P.R., Carranza F.A. Carranza's Clinical Periodontology. – 13th ed. – St. Louis: Elsevier, 2018. – 944 p.
3. Preshaw P.M., Bissett S.M. Periodontitis: oral complication of diabetes // Diabetologia. – 2019. – Vol. 62, № 10. – P. 1771–1778.
4. Tonetti M.S., Jepsen S., Jin L., Otomo-Corgel J. Impact of the global burden of periodontal diseases on health, nutrition and wellbeing // Journal of Clinical Periodontology. – 2017. – Vol. 44, Suppl. 18. – P. S456–S462.
5. Slots J. Periodontology: past, present, perspectives // Journal of Dental Research. – 2015. – Vol. 94, № 7. – P. 972–979.
6. Cobb C.M. Clinical significance of non-surgical periodontal therapy: an evidence-based perspective of scaling and root planing // Journal of Periodontology. – 2017. – Vol. 73, № 11. – P. 1560–1569.
7. Chapple I.L.C., Mealey B.L., Van Dyke T.E. et al. Periodontal health and gingival diseases and conditions on an intact and a reduced periodontium // Journal of Clinical Periodontology. – 2018. – Vol. 45, Suppl. 20. – P. S68–S77.
8. Kinane D.F., Stathopoulou P.G., Papapanou P.N. Periodontal diseases // Nature Reviews Disease Primers. – 2017. – Vol. 3, № 1. – P. 17038.

-
9. Herrera D., Sanz M., Jepsen S. et al. A systematic review on the effect of professional mechanical plaque removal in the prevention of periodontal diseases // Journal of Clinical Periodontology. – 2020. – Vol. 47, Suppl. 22. – P. 117–135.
 10. Sanz M., Herrera D., Kebschull M. et al. Treatment of stage I–III periodontitis – The EFP S3 level clinical practice guideline // Journal of Clinical Periodontology. – 2020. – Vol. 47, Suppl. 22. – P. 4–60.