

**THE ROLE OF NON-SETTING PLASTIC PASTES IN THE TREATMENT OF
PERIODONTITIS IN MODERN ENDODONTICS**

Kurbanova Nodira Vakhidova

Assistant of the Department of Dentistry

Asia International University, Bukhara, Uzbekistan

Abstract: Periodontitis is one of the most complex and multifactorial inflammatory diseases in therapeutic dentistry, and its effective treatment requires a comprehensive approach in modern endodontics. This article analyzes the role and clinical significance of non-setting plastic endodontic pastes in the treatment of periodontitis. Based on a review of scientific literature, the effects of these pastes on the microbiological environment of the root canal, their ability to reduce inflammation, and their effectiveness in stimulating regenerative processes in periapical tissues were evaluated.

According to research findings, the use of non-setting pastes reduces the bacterial load in the root canal by up to 60–80%, while clinical and radiological remission is observed in 75–85% of cases. In comprehensive endodontic treatment (combined with mechanical and antiseptic preparation), the use of these pastes increases overall treatment efficacy by 20–30%. The obtained results confirm that non-setting endodontic pastes are an important and effective component of modern endodontic therapy in the management of periodontitis.

Keywords: periodontitis, endodontics, non-setting pastes, root canal, periapical inflammation.

Introduction

Periodontitis is one of the most complex and multifactorial inflammatory diseases in therapeutic dentistry, characterized by infectious damage to the root canal system and periapical tissues. Endodontic research demonstrates that the complex anatomy of the root canal system, polymicrobial infection, and the immunobiological response of periapical tissues play leading roles in the pathogenesis of periodontitis [1].

Koin A.N. emphasized that chronic and recurrent forms of periodontitis are often associated with insufficient disinfection of the root canal system [1].

According to epidemiological data, periodontitis is diagnosed in 35–45% of patients seeking therapeutic dental care and is frequently accompanied by destructive periapical changes [2]. Borovskiy E.V. reported that, in addition to microorganisms, their metabolic toxins play a significant role in the development of periapical destruction [2].

The primary goal of modern endodontics is complete disinfection of the root canal through mechanical and chemical methods, as well as stimulation of regenerative processes in periapical tissues. *Cohen's Pathways of the Pulp* states that mechanical preparation alone is insufficient and

that combining it with intracanal medicament therapy increases treatment success rates to 80–90% [3].

In recent years, non-setting plastic endodontic pastes have been widely used for temporary root canal filling and intracanal infection control. Their application has been shown to reduce bacterial load by up to 60–80% and achieve clinical remission in 75–85% of cases [3,4]. Therefore, non-setting pastes represent an important and effective component in the modern treatment of periodontitis.

Non-Setting Plastic Pastes: Concept and Main Characteristics

Non-setting plastic endodontic pastes are soft, elastic materials without a setting reaction that are temporarily introduced into the root canal system. They allow prolonged maintenance of a therapeutic environment and are mainly used during intermediate stages of treatment.

Their main characteristics include:

- high adaptability to root canal walls;
- complete coverage of complex canal anatomy;
- sustained and controlled release of pharmacological components;
- suppression of residual microflora remaining after mechanical preparation.

Studies indicate that the use of non-setting pastes reduces bacterial load in the root canal by 60–80% [3].

Mechanism of Action and Pharmacological Effectiveness

Non-setting pastes exert their therapeutic effects through several mechanisms:

- antibacterial action — reduction of canal microflora;
- anti-inflammatory action — decreased activity of periapical inflammatory mediators;
- analgesic effect — reduction of pain syndrome;
- regenerative effect — stimulation of periapical bone and periodontal tissue repair.

Clinical observations show that pastes containing eugenol and antiseptic components reduce pain within 24–48 hours in 70–75% of patients, while exudation decreases by up to 65% [4].

Clinical Application in the Treatment of Periodontitis

Non-setting pastes are recommended in the following cases:

- acute and chronic apical periodontitis;
- presence of destructive periapical changes;
- persistent exudation from the root canal;
- prior to permanent obturation;
- retreatment (re-endodontic) cases.

Clinical and radiological assessments indicate remission rates of 75–85% when such pastes are used [5].

Role in Modern Endodontics and Significance in Comprehensive Treatment

Comparative studies of different treatment approaches demonstrate the following effectiveness rates:

- mechanical preparation alone — 50–55%;
- mechanical + antiseptic treatment — 65–70%;
- mechanical + antiseptic treatment + non-setting pastes — up to 80–90% [6].

These results confirm that non-setting pastes serve as an important adjunctive therapeutic tool in modern endodontics.

Advantages and Limitations

Advantages:

- ease of application and adaptability;
- prolonged therapeutic action;
- rapid reduction of inflammation.

Limitations:

- not a permanent filling material;
- risk of reinfection (10–15%) if left without proper monitoring [7];
- possible individual sensitivity reactions.

Conclusion

Non-setting endodontic pastes represent an essential component of modern endodontic therapy in the treatment of periodontitis. Their use enables effective control of root canal infection, reduction of inflammation, and acceleration of regenerative processes in periapical tissues. In comprehensive treatment protocols, the inclusion of these pastes increases overall treatment success by 20–30%.

Reference:

1. Koin A.N. *Endodontic treatment of inflammatory periapical diseases*. Moscow: Meditsina; 1985.
2. Borovskiy E.V. *Endodontiya: klinika, diagnostika va davolash*. Moscow: Meditsina; 2004.
3. Hargreaves K.M., Berman L.H. *Cohen's Pathways of the Pulp*. 11th ed. St. Louis: Elsevier; 2016.
4. Grossman L.I., Oliet S., Del Rio C.E. *Endodontic Practice*. Philadelphia: Lea & Febiger; 1988.
5. Voronov Yu.I. *Clinical endodontics*. Saint Petersburg: SpetsLit; 2016.

6. European Society of Endodontology. Quality guidelines for endodontic treatment. *Int Endod J.* 2021;54(2):163–202.
7. Kopeykin V.N. *Modern dentistry.* Moscow: Medpress-inform; 2018.
8. Vakhidovna, K. N. (2024). The Intensity of Caries and Deep Inflammation in School-Age Children. *International Journal of Pediatrics and Genetics*, 2(7), 85-89.
9. Vakhidovna, K. N. (2024). Modern Presentation of Calcium-Containing Drugs in the Course of the Study of Dental Diseases. *International Journal of Alternative and Contemporary Therapy*, 2(7), 12-14.
10. Kurbanova, N. V. (2024). CLINICAL EVALUATION OF A CRACKED AND FRACTURED TOOTH. *European Journal of Modern Medicine and Practice*, 4(11), 544-548.
11. Kurbanova, N. V. (2024). Clinical and Morphological Features the Occurrence of Tooth Decay. *International Journal of Alternative and Contemporary Therapy*, 2(9), 128-132.
12. Kurbanova, N. V. (2024, July). Modern Views on the use of Metal-Ceramic Structures in Dental Prosthetics. In *Interdisciplinary Conference of Young Scholars in Social Sciences (USA)* (Vol. 8, pp. 15-18). <https://www.openconference.us/index.ph>.
13. Kurbanova, N. V. (2024). Clinical and Morphological Features the Occurrence of Tooth Decay. *International Journal of Alternative and Contemporary Therapy*, 2(9), 128-132.