

Substantiation of Methods of Endodontic Treatment of Chronic Apical Periodontitis

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ABSTRACT

This article examines the examination of 44 examined patients for the period 2022 at the scientific and practical dental center at the Bukhara State Medical Institute, 32 patients with granulating and granulomatous forms of chronic apical periodontitis were identified.

Introduction

Methods of filling root canals with "one paste" and resorcinol-formalin method in poorly passable root canals do not guarantee their high-quality obturation and can lead to the development of periapical foci of chronic infection. This underlines the importance of high-quality endodontic treatment, which allows to prevent microbial contamination and the impact of their waste products on the surrounding tissues.

HAP is a great danger to the body, causing its chronic intoxication and sensitization, being the cause of general somatic diseases such as rheumatism and glomerulonephritis, and can also lead to tooth loss. The treatment of periodontitis consists in the elimination of inflammation in the periapical region by opening the tooth cavity, chemomechanical, antiseptic treatment of the root canal and its obturation (Garaza N.N., Gottlieb A.O., 2009). HAP ranks third in the frequency of treatment in medical institutions after dental caries and pulpitis [Tarasenko S.V., 2015; Sevbitov A.V., 2016; Tarasenko S.V., 2016; Shayymbetova A.R., 2017]. Among those who applied to the clinic of therapeutic dentistry, patients with various forms of HAP make up 30-40% [Radyshevskaya T.N., 2016; Tarasenko S.V., 2016; N.N. Dessaune., 2018].

Most often, HAP in people of working age develops as a result of complications of dental caries [Kuratov I.A., 2015; Tarasenko S.V., 2015; Rozenbaum A.Yu., 2017; N.S. Soukos., 2006]. According to Demyanenko S.A. and co-authors [Tofan Yu.V., 2017], the frequency of complicated caries leading to the development of HAP in 34-47-year-olds reaches 50% [J.K. Huh., 2016]. At the same time, most of them are patients of working age.

Most often, in almost 75% of cases, HAP develops in patients with a history of conservative treatment for pulpitis or periodontitis. According to Zorina V.V. and co-authors, chronic

destructive periodontitis, in more than a third of cases, is the result of incorrect endodontic treatment, the quality of which determines the prognosis of tooth function restoration [1.3.5.7.9.11.13].

The purpose of the work. Improving the effectiveness of treatment of chronic apical periodontitis by improving endodontic treatment with separate and combined use of new methods of depot- and apex-foresis with the joint use of the method of fluctuation.

At the same time, the main causes of failures and complications are associated with insufficient disinfection of the passable part of the root canal. Even intra-channel use of antibiotics, which at one time was considered as the most effective method, does not always give a positive result. The most difficult task in this case is the full-fledged processing of the apical part of the tooth root, where the root canal gives numerous branches and forms the so-called apical delta. To improve the quality and improve the existing methods of treatment of chronic apical periodontitis of teeth with impenetrable root canals, we carried out dental treatment using new physical methods – copper-calcium hydroxide depopohoresis, apex-foresis with a silver-copper conductor with a combination of the method of fluoridation both individually and in combination compared with the traditional method of treating the disease.

In the treatment of chronic apical periodontitis with apex-foresis using a silver-copper electrode, the growth retardation zones of all strains of facultative anaerobic bacteria studied were 5.1 mm (3.9-5.0 mm), at a dose of 1.5 mA x min, which is regarded as a weak antibacterial effect of this dose of apex-foresis [2.4.6.8.10.12.14.15.16.18.20.22.24.25].

While the current increases during the procedure to 2.5 mA x min, the diameter of the growth retardation zones is 8.6-9.6 mm, which corresponds to a moderately pronounced antibacterial effect. The most pronounced antibacterial effect was detected at a dose of apex-foresis of 5 mA x min, that is, the diameter of the zones of growth delays of colonies of the studied bacteria was more than 15.4 mm (15.4-22.4 mm) (Fig. 3.1).

Thus, the optimal doses of apex-foresis that have an antibacterial effect are also 2.5-5 mA x min.

In the combined endodontic treatment of chronic apical periodontitis with the use of depot-, apex - foresis and the method of fluoridation, even more pronounced antibacterial effects are observed than using them separately (Table 3.1). Thus, the diameter of the growth retardation zones of the strains of the studied anaerobic bacteria with the combined use of depot-, apex – foresis and the method of fluoridation is equal to an average of 20.4 mm (17.8-24.5 mm), which has 4.8 times more antibacterial effect than traditional treatment. This is respectively 4.2 mm, 1.6 times more than depoforez (respectively 12.8 mm) and 1.5 times more than apex-forez (respectively 13.2 mm).

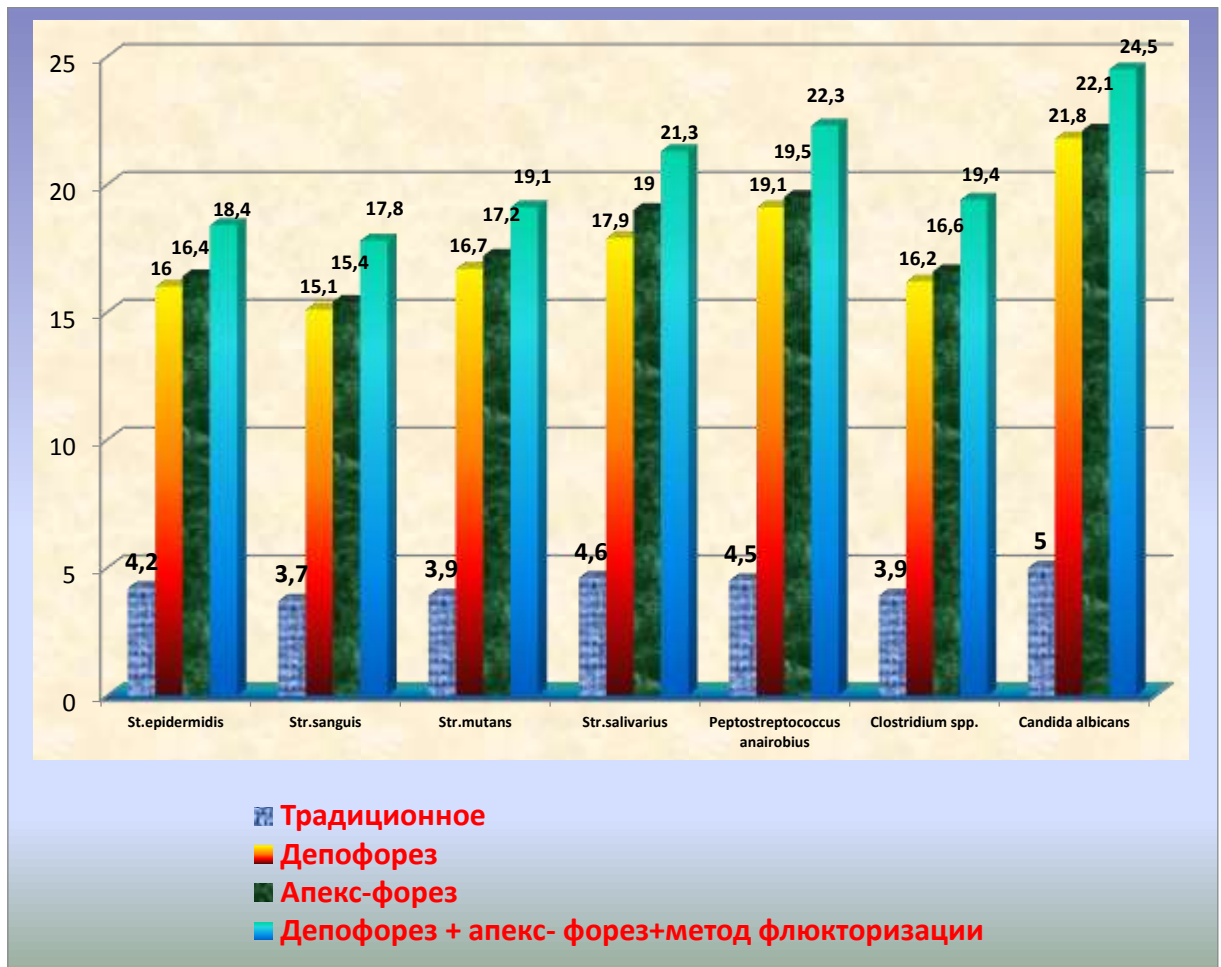


Fig. 1. Diameter (in mm) of the zone of growth retardation of colonies of anaerobic bacteria, depending on the type of endodontic treatment used at a dose of the procedure of 5 mAxmin.

For example, the largest spectrum of microflora was isolated from the material obtained from patients with chronic granulating periodontitis, and monoinfection was not found at all in patients with chronic granulomatous periodontitis. In all forms of the disease, Streptococcus and Candida fungi were present in patients before treatment, with streptococcal microflora dominating the associations.

The normality of the distribution of indicators in each of the compared groups was assessed using the Shapiro-Wilk criterion (at $n < 50$). To compare indicators whose distribution differs from normal St.epidermidis ($p = 0.017$), Clostridium spp. ($p = 0.029$), the nonparametric Kraskel-Wallis criterion was used. The statistical significance of the differences in the indicators was assessed by comparing the calculated value of the Kraskel-Wallis criterion with the critical ones, determining the significance level p using the statistical program SPSS[13.15.17.19.21.23.24.25].

Conclusion.

The use of copper-calcium hydroxide depophoresis and apex-foresis of the silver-copper conductor of the root canal of teeth in the complex endodontic treatment of chronic apical periodontitis leads to a 2.0-3.3 one-time better reduction of facultative anaerobic bacteria than

traditional treatment.

At the same time, the most pronounced (1.5-2.5 times more) the combined use of depot-, apex – forsis with the combined use of the method of fluoridation has an antibacterial effect, rather than using them separately.

The use of depot- and apex- forsis in the treatment of chronic apical periodontitis leads to a significantly ($P < 0.05-0.001$) rapid acceleration of the processes of regeneration of periapical tissues compared with traditional methods of treatment of the disease.

At the same time, the combined use of depot-, apex – forsis with the combined use of fluoridation has a 1.3-2.2 times effective effect on the condition of the periapical tissue of the teeth than using them separately. It is expressed in reducing the number of complications, accelerating the process of bone regeneration in the apical periodontal region and thereby reducing the number of visits of patients to a dental institution.

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