



STATISTICAL ANALYSIS OF THE METHOD OF DELAYED FILLING IN CHRONIC APICAL PERIODONTITIS

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ABSTRACT

Despite the constant introduction of the latest endodontic instruments, materials and technologies, the rate of complications after endodontic treatment remains high. Patients with diseases of the periapical tissues make up from 18% to 40% of the total number of people seeking dental care [1,2,3,4]. Chronic apical periodontitis can serve as a source of development of odontogenic inflammatory processes in the maxillofacial region and neck, complicate the course of diseases of internal organs and systems, lead to tooth extraction, bite deformation and a decrease in chewing efficiency, thereby causing physical and moral inconvenience to the patient [5,6, 7,]. The sources of progressive periapical foci of chronic infection in 14.8% of cases are teeth with unfilled root canals and in 76.4% - teeth with partially filled canals [8]. During an X-ray examination of teeth after previous endodontic treatment using resorcinol-formalin and Calcevit pastes, periapical destructive changes were revealed in 80% of cases and poorly filled root canals in 50% of cases [9]. The cheapest and most widespread filling materials for root canals in the vast majority of dental medical organizations (73.4%) are Ca(OH) - Kalcevit (VladMiVa) and resorcinol-formalin paste [10].

Materials and methods.

We conducted a study of randomly selected 134 medical records of dental patients aged 25 to 52 years from a dental appointment in a city municipal clinic for the period from 2018 to 2023. According to the type of paste, all examined patients were divided into two groups: 78 patients (51.5%) whose teeth were filled with resorcinol-formalin paste and 56 patients (48.5%) with Kalcevit (VladMiVa) paste. At this stage, repeated endodontic treatment was performed on 57 patients (64 teeth): 32 women and 25 men aged from 18 to 70 years,

due to poor-quality endodontic treatment due to chronic pulpitis and/or chronic pulpitis in the acute stage. A comprehensive examination of patients consisted of clinical and radiological methods. Clinical examination included inspection, palpation, percussion, and probing. Targeted intraoral radiographs of the examined teeth were taken to determine the density and level of root canal filling, the degree of their patency, the condition of the periapical tissues (widening of the periodontal fissure, the nature of periapical changes) and the bone tissue of the interdental septa.

Using a random sampling method, patients were divided into two groups: control and main. In turn, each group was divided into two subgroups according to the type of filling material in the root canals: Ca(OH) - Kalcevit (VladMiVa) and resorcinol-formalin paste.

Table 1. Distribution of patients in the control and main groups.

Type of pasta	RFP		Ca(OH)		Total	
	Abs	%+t	Abs	%+t	Abs	+t
Control	13	52.4+-6.0	16	45.8+-6.4	31	45.0+-4.3
Main	27	54.2+-6.0	18	45.8+-6.0	43	55.0+-4.3
Total	40	54.2+-4.4	34	45.8+-4.4	74	100

Note: in this and subsequent tables

Radiopharmaceuticals - resorcinol - formaldehyde paste, Ca(OH) - Kalcevit (VladMiVa) paste, Abs. - absolute value.

Results.

It was found that in the group of teeth previously treated using resorcinol-formalin paste, more than 2/3 were molars (77.0 + 2.2%), every fifth tooth was a premolar (19.1 + 2.0%) and less in total there were anterior teeth (3.9 + 1.0%). In this group of different age subgroups of patients, we noted that at the ages of 35 - 44 years, 45 - 54 years and 55 - 64 years, all types of teeth are most fully represented: incisors, canines, premolars and molars. In the subgroup of patients 35-44 years old, the number of molars dominated - 80.5 + 3.7%, premolars were 4 times less - 18.6 + 3.7%, and anterior teeth - 0.9 + 0.9%.

A similar trend persisted in the age subgroup of 45-54 years: it was also dominated by molars - 75.9 + 4.0%, significantly less premolars - 22.4 + 3.9%, and anterior teeth - 1.7 + 1, 2%. In the age subgroup of 55-64 years, there were 59.3 + 5.5% molars, 25.9 + 4.9% premolars, and 14.8 + 3.9% anterior teeth. In the oldest age subgroup of 65 years and older and the subgroup of patients aged 25-34 years, the species composition of teeth was represented by premolars and molars. In the 25-34 year old subgroup there were 95.3 + 3.2% molars and significantly fewer premolars - 4.7 + 3.2%.

In patients 65 years of age and older, there were 71.4 + 17.1% molars, and 2.5 times less premolars - 28.6 + 17.1% of teeth. In the youngest age subgroup of patients 18-24 years old, all identified teeth were molars. The largest number of teeth in total was in patients of the age subgroups 45 - 54 years (30.7 ± 2.4%) and 35 - 44 years (29.9 + 2.4%).

In the group of teeth previously treated with Kalcevit (VladMiVa) paste, the ratio of tooth types in different age subgroups differed. Almost equal shares in frequency were noted for anterior teeth (29.2 + 2.4%), premolars (29.8 + 2.4%), the proportion of molars was slightly higher (41.0 + 2.4%). In this group of patients, in almost all age subgroups, except for the

oldest subgroup, all types of teeth were identified. In the youngest age subgroup of patients 18-24 years old, molars predominated - 58.9 + 6.6%, premolars were two times less - 26.8 + 5.9%, anterior teeth were 14.3 + 4.7%. In the age subgroup of 25-34 years, the proportions of premolars and anterior teeth were almost the same: 34.5 + 5.2% and 35.7 + 5.2%, there were slightly fewer molars - 29.8 + 5.0%.

In the subgroups of patients 35-44 years old and 45-54 years old, the proportions of anterior teeth and premolars were the same: 27.5 + 4.1% and 31.3 + 6.9%, respectively. In the subgroup of 55-64 years old there were almost half of the front teeth - 44.8 + 9.2%, and the same number of premolars and molars: 27.6 + 8.3% of teeth each. In the oldest age subgroup of 65 years and older, there were 66.7 + 27.2% of molars, and half as many premolars - 33.3 + 27.2%. Greatest

the number of patients treated endodontically using Kalcevit (VladMiVa) paste was aged 35-44 years (33.7 + 2.5%), slightly less in the age subgroup 25-34 years (23.6 + 2.3%).

Thus, as a result of a retrospective analysis, we came to the conclusion that two types of pastes were most widely used for filling root canals: resorcinol-formalin (51.5%) and Kalcevit (VladMiVa) (48.5%). We noted that the species composition of teeth previously filled with resorcinol-formalin paste consistently expanded with increasing age of patients. Moreover, in each age subgroup, the number of treated molars dominated over other types of teeth. And in the group of teeth previously filled with Kalcevit (VladMiVa) paste, the species composition of the teeth was widely represented in all age subgroups.

Conclusions.

Repeated endodontic treatment in compliance with modern requirements for mechanical, medicinal treatment and filling of root canals promotes the restoration of bone tissue in the area of destructive periapical foci, regardless of the type of paste, while the favorable prognosis is significantly higher for teeth previously filled with poor Kalcevit (VladMiVa) paste (17.3 %) than resorcinol-formalin (12.5%). A retrospective analysis found that endodontic treatment of teeth diagnosed with chronic pulpitis or chronic pulpitis in the acute stage was more often carried out using resorcinol-formalin paste in patients aged 45-54 years (30.7 + 2.4%), using Kalcevit (VladMiVa) pasta - 35-44 years old (33.7 + 2.5%), which indicates a socially active part of the population.

The dynamics of restoration of periapical lesions was 2-2.5 times higher in teeth (especially previously treated with Kalcevit (VladMiVa)), during retreatment of which the method of delayed root canal filling was used (in teeth with resorcinol-formalin paste - 31.9%, in teeth with Kalcevit (VladMiVa) paste - 36.4%), compared with conventional endodontic treatment (in teeth with resorcinol-formalin paste - 12.5%, in teeth with Kalcevit (VladMiVa) paste - 17.3%), which is reliably confirmed by the dynamics of growth in the average values of the PAI index according to A. M. Solovyova

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