

BIOLOGICAL METHODS OF TREATMENT OF PULPITIS

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Abstract. *In our country, the number of patients with inflammatory diseases of the pulp, according to various authors, ranges from 19.5 % to 48.5% of all applicants for dental help. In the treatment of reversible forms of pulpitis, along with the use of drugs for direct covering the pulp, the complex of therapeutic measures includes various physical factors, contributing to the relief of inflammation and increasing the regenerative capacity of tissues, but as the study showed, a small number of doctors apply this in their daily dental practice.*

Keywords: *dental pulp, pulpitis, biological method of treatment, questioning, calcium hydroxide, physiotherapy.*

БИОЛОГИЧЕСКИЕ МЕТОДЫ ЛЕЧЕНИЯ ПУЛЬПИТА

Аннотация. *В нашей стране количество больных с воспалительными заболеваниями пульпы, по данным различных авторов, колеблется от 19,5 % до 48,5 % всех обратившихся за стоматологической помощью. При лечении обратимых форм пульпита, наряду с применением препаратов для непосредственного покрытия пульпы, в комплекс лечебных мероприятий включают различные физические факторы, способствующие купированию воспаления и повышению регенеративной способности тканей, но как показало исследование, небольшое количество врачей применяют это в своей повседневной стоматологической практике.*

Ключевые слова: *пульпа зуба, пульпит, биологический метод лечения, анкетирование, гидроксид кальция, физиотерапия.*

INTRODUCTION

The need to provide high-quality and effective dental care to the population is obvious and does not require special argumentation. At the same time, it should be noted that the volume of therapeutic measures in dentistry is not always limited to instrumental interventions, but often requires an integrated approach. In clinical practice, the problem of preserving damaged dental pulp stands before the doctor even when the pulp chamber remains unopened during the treatment of deep carious lesions of the dentin, and there are no clinical signs of degenerative changes in the pulp and periapical tissues.

MATERIALS AND METHODS

Despite the feasibility of biological treatment pulpitis, especially at the initial stages of the pathological process, random opening the cavity of the tooth in patients of different age groups without aggravating somatic pathology, this method has not taken a dominant position among other types of pulpitis treatment. In order to obtain more objective information about the level of specialized care provided to patients with reversible forms of pulpitis, a survey of dentists was conducted among the staff of the Department of Therapeutic Dentistry, Department of Paediatrics of dental diseases

The questionnaire was developed by the staff of the Department of Therapeutic Dentistry. It contained a list of questions, allowing to assess the level of professional qualification of

respondents, the volume of diagnostic manipulations prescribed and carried out by them in patients, the frequency of using the biological method of treatment in clinical practice and the most commonly used drugs. The degree of satisfaction with existing methods of treatment of reversible forms of pulpitis was also assessed.

The survey was anonymous. In total, 50 doctors were interviewed from September 1 to September 30, 2022, including 25 specialists in therapeutic dentistry, 15 pediatric dentists, 10 general practitioner dentists.

RESULTS

For an objective assessment of the results of the survey, it was decided divide the respondents into 5 groups, depending on their work experience:

Group 1 □ work experience in clinical practice up to 5 years;

- 2nd group - 5-10 years;

- 3rd group - 11-15 years old;

- 4th group - 16-20 years old;

- 5th group - more than 20 years.

After counting and processing the answers received during the survey, it was found that more than 75% of all respondents believe that the existing methods of treatment of reversible forms of pulpitis are not effective enough, which creates the prerequisites for the search for new methods.

When analyzing the results of the survey, it was found that 84.5% of the surveyed dentists used the biological method of pulp treatment at least once in their clinical practice. It should be noted that doctors with experience of 16 years or more in 75.5% of cases there were complications in the treatment of teeth by this method. Answering the question, how often does the unplanned happen in your practice opening of the dental pulp, respondents of all groups in 95% of cases noted that rarely and only 5% never encountered.

As the survey showed, the vast majority of dentists in case of accidental opening of the dental pulp, a biological method of treatment was chosen, occasionally giving preference to amputation and extirpation methods:

- in group 1, the biological method is used - 87.4%, amputation methods - 5%, extirpation methods - 7.6%;

- in group 2, the biological method is used - 48.7%, extirpation methods - 51.3%;

- in the 3rd group, the biological method is used - 79.5%, extirpation methods - 20.5%;

- in the 4th group, the biological method is used - 100%;

- in the 5th group, the biological method is used - 49.4%, amputation methods - 24.7%, extirpation methods - 25.9%.

As the survey showed, doctors believed that for a quick recovery the vital activity of the pulp after a short-term inflammatory reaction, it is necessary to take into account the bacterial factor, and preparations based on calcium hydroxide, which has a bactericidal effect, were usually used as a dressing. Action, coagulation and dissolution of necrotic tissues, prevents resorption of bone tissue, induces the formation of an osteocement apical barrier, stimulates the formation of tertiary dentin (with direct coating pulp). It has been established that dentists most often use Dycal by Dentsply in 45.6% of cases.

However, as is known from the literature data, the classical forms of calcium hydroxide have a number of disadvantages, such as resorption of the material in a humid environment, a

decrease in efficiency upon contact with air due to partial carbonization. New opportunities for biological treatment pulpitis were presented by ProRoot, MTA (Dentsply) and MTA-Angelus (Angelus),

which are used by only 32.6% of all respondents. The basis of the materials is Portland cement (a mixture of calcium silicates, calcium-containing aluminum compounds and iron). But the high cost of drugs makes effective method of treatment for Russian patients in budgetary medical institutions.

The firm "VladMiVa" (Russia) developed a dental material "Trioxident", which is a more affordable analogue of MTA, the main which components are oxides of calcium, silicon, aluminum. But this the material is not widely used and only 3% of all interviewed dentists.

In addition, the majority of respondents use original methods treatment without following a single protocol. So, to the question: For how long do you apply medical pads in case of accidental opening of the tooth pulp? the following responses were received, as shown in the table.

The timing of the imposition of medical pads in case of accidental opening of the tooth pulp

The term of imposing a medical pad	% of respondents
less than a week	7%
Week 1	9%
2-3 weeks	35%
1 month	27%
more than a month	5%
6 months	6%
Under a permanent filling	11%

It should also be noted that in the comments, doctors with experience of 1 year up to 10 years in 11% of cases, a medical pad is applied under a permanent filling. It is noteworthy that only 16% of the surveyed doctors use the biological method of treatment only in pediatric practice, 57% of dentists in the treatment of pulpitis in patients under 25 years old, however, 20% of respondents use this method for patients 25-45 years old, and 7% do not consider age

contraindication to the use of a biological method of treatment. As a result of processing the survey data, it was found that dentists in the treatment of reversible forms of pulpitis use very little additional research methods. Electroodontodiagnostics is used no more than 60% of doctors, and X-ray examination only 40%. At the same time, the diagnosis of the vitality of the dental pulp using the methods of rheodentography (RDG) and Doppler flowmetry (DF) is not used in practice at all, since none of the 105 respondents used these methods, referring to the complexity of conducting these studies, their low information content and lack of necessary equipment. It has been established that doctors are little informed about the possibility of using physiotherapy to preserve the viability of the pulp. Only 18.3% of physicians in their physiotherapy is used in clinical practice. However, out of the variety physical factors that can stop inflammation and stimulate the regenerative capabilities of the pulp, only laser therapy is used. Often doctors refer to the lack of physiotherapy equipment, however, the survey showed that in modern dental clinics there is a fairly wide widespread use of ozone generating plants. Thus, based on the results of the survey 50 practicing dentists found that improving the treatment of reversible forms of pulpitis by the biological method is a very urgent problem in modern dentistry. About 85% of the respondents at least times in their clinical practice encountered the use of biological pulpitis treatment method.

DISCUSSION

However, during this method of treatment, quite often there are complications. More than 75% of all respondents believe that the existing methods of treatment of reversible forms of pulpitis are not effective enough. The survey showed that complications and errors in the treatment of reversible forms of pulpitis are most often associated with non-compliance with a single protocol for maintaining patients, insufficient use of additional research methods, allowing not only to clarify the diagnosis, but also to control the condition of the pulp teeth during treatment. In addition, it was found that during the biological of the method of treatment, physiotherapy is little used, which makes it possible to increase the effectiveness of treatment.

A remarkable fact is that no correlation was found between the level of knowledge of doctors on the issue under study and the length of service in the specialty. This dictates the need to improve the level of training of students and doctors. When conducting seminars, practical classes, lectures, more attention should be paid to the treatment of reversible forms of pulpitis, as practice shows that the use of a biological method of treatment remains relevant, both in pediatric and adult dentistry.

CONCLUSIONS

In conclusion, it should be noted that the relatively widespread devices for ozone therapy in modern dental clinics creates favorable prospects for implementation in the dental practice developed at the Department of Therapeutic Dentistry of the Samarkand State Medical University a method for the treatment of reversible forms of pulpitis using ozone therapy in combination with direct coating of the pulp with therapeutic materials.

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