

Efficiency Of Combination Drugs In The Treatment Of Reversible Pulpitis

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Abstract. The article presents a clinical evaluation of the effectiveness of combination drugs containing topical corticosteroids in the treatment of recurrent forms of pulpitis. It was found that when using a combination drug containing an antibiotic and a local corticosteroid, a pronounced analgesic effect occurs, which occurs in 22% of cases in the first hours after using the drug, in 66.7% - within 24 hours. The use of a paste containing an antibiotic and a local corticosteroid is justified for maintaining the viability of the pulp due to its pronounced anti-inflammatory and antimicrobial effect and preservation throughout the rehabilitation period in 77.8% of patients.

Key words: reversible pulpitis, treatment.

Introduction. Modern pulpitis treatment tactics involve complete removal of the inflamed pulp followed by root canal obturation using sealers and gutta-percha. The choice of method is determined by a number of factors, primarily the timing of patients seeking help, usually at the stage of irreversible changes, with late and insufficient diagnostics of inflammatory processes in the pulp during treatment of uncomplicated forms of caries, as well as possibly limited indications and a strict list of stages and manipulations of the conservative treatment method, which limits its use in the daily tactics of a dentist. Remote results of monitoring depulped teeth indicate the appearance of such "undesirable" phenomena as fragility, loss of large volumes of hard tissue, which requires mandatory orthopedic treatment using an inlay and a crown, and, finally, the development of complications in the form of apical periodontitis as a result of poor-quality root canal obturation after pulpitis treatment [1, 2, 3, 4].

In this regard, it seems relevant to more widely introduce conservative methods of pulpitis treatment into the daily practice of a dentist-therapist, aimed at full or partial preservation of viable pulp. The conservative method of treatment includes two methods - full preservation of pulp viability (biological method) and the method of vital amputation, which provides for the preservation of root pulp, which is especially important in multi-rooted teeth [1, 3, 4].

The biological method of treating pulpitis is based on the effect of medicinal substances on microorganisms - the cause of the inflammatory process, and on the pulp tissue in order to restore its morphological and functional state.

Preservation of a living, full-fledged pulp is very important for the tooth and the body as a whole, which is due to its main functions - protective, trophic and plastic. In the case of inflammation and death of the pulp, problems of chronic stomatogenic infection and sensitization of the body arise, and subsequently the development of complications, often leading to tooth loss [1, 3, 4, 7].

The prerequisites for the development of a biological method of treating pulpitis were the data accumulated over the past three decades on the biology and pathology of the pulp, which changed the previously existing view of the inflamed pulp as an undoubtedly doomed organ. A good foundation for the development of this direction are also the pharmacological developments of the modern dental industry, which produces combination drugs that affect the main links of the inflammatory process in the dental pulp [2, 7].

Traditionally, for the biological method of treating pulpitis, medicinal pastes for direct and indirect pulp coating based on calcium hydroxide are used. The use of drugs in this group is due to the wide range of their pathogenetic effects on the inflamed pulp - antimicrobial, anti-inflammatory and odontotropic [4].

Medicinal drugs containing combinations of several drugs are widely used, most often antibiotics and glucocorticosteroids. The most popular of these are pastes containing dexamethasone acetate and antibacterial drugs such as framycetin sulfate and polymyxin B. The complex combination of dexamethasone, which has an active anti-inflammatory and anti-edematous effect, and two broad-spectrum

antibiotics in small doses provides a pronounced therapeutic effect of the drug and determines the range of its application, including in the treatment of symptomatic pulpitis [1, 2, 4, 6, 7].

It should be added that corticosteroids included in the composition of combined agents used to treat symptomatic pulpitis, having a prolonged effect, can affect the body as a whole, cumulating in the body, which can have adverse effects, especially in patients with aggravated somatic pathology.

The appearance on the domestic dental market of a drug containing local corticosteroids has determined wide opportunities for the treatment of caries complications, including biological methods [2,7]. The basis of the drug was a broad-spectrum antibiotic with a bacteriostatic effect - demeclocycline (Demeclocycline hydrochloride), effective against microorganisms characteristic of inflammatory processes in the tissues of the pulp and periodontium, and a fluorinated glucocorticosteroid of local action (FGLA) - triamcinolone (Triamcinolone acetonide), which has pronounced antiallergic, decongestant and anti-inflammatory effects. In the available domestic literature, there was insufficient information on the results of the use of drugs containing FGLA for the treatment and prevention of inflammatory changes in the dental pulp, including the results of a comparative assessment of the effectiveness of this drug with similar agents.

Based on this, the goal of our study was formulated - to conduct a clinical assessment of the effectiveness of combined drugs containing an antibiotic and FGLA in the treatment of reversible forms of pulpitis using a biological method.

Material and methods. The study involved 18 patients aged 18 to 35 years diagnosed with pulp hyperemia and acute focal serous pulpitis, i.e. the main forms of reversible pulpitis. The sample of patients for the study was conducted taking into account the main indications for the biological method of treating pulpitis, namely: the absence of prolonged pain syndrome (more than 2 minutes) under the influence of thermal and chemical irritants against the background of the clinical picture of pulp hyperemia or initial pulpitis. The absence of a reaction from the periapical tissues - painlessness when biting on the tooth, confirmed by X-ray data. The patient's age is not older than 35-40 years. A mandatory condition for the selection of clinical material was good oral hygiene and low caries intensity, as well as the absence of concomitant pathology of the oral mucosa and periodontal tissues and severe organ pathology of internal organs, such as diabetes mellitus, thyroid disease, cardiovascular pathology, etc. All patients underwent determination of pulp electrical excitability (EE) as a mandatory examination method. EE values up to 20 μ A were the criterion for selecting patients for the study. One of the main symptoms of inflammation is pain. Pain in pulpitis is an important differential diagnostic sign that allows assessing the effectiveness of the therapy at different stages, including the rehabilitation stage. In our study, the assessment of pain syndrome as an effectiveness criterion at different stages of the study - before treatment, after application of the drug and at the rehabilitation stage - was carried out using a numerical rank scale (NRS) [5].

This assessment criterion is quite simple, since the scale consists of a series of numbers from 0 to 10.

Patients are asked to assess pain sensations using numbers in the range from 0 (no pain) to 10 (maximum possible pain). By comparing pain scores on this scale at different stages of treatment, one can judge its effectiveness.

In our study, the NRS was used in all patients at the diagnostic stage, immediately after applying the medicinal paste and before placing a permanent filling.

Treatment with the paste containing FGLA was carried out in two stages. During the first visit, to preserve the vitality of the pulp in the initial (reversible) forms of pulpitis, the paste was applied to the bottom of the carious cavity after preliminary preparation of the tooth with strict adherence to all the rules of asepsis and antisepsis.

For this purpose, EE, temperature test, pain assessment according to the NRS were first carried out, then after anesthesia of the causative tooth, instrumental treatment and thorough medicinal treatment of the carious cavity with a weak antiseptic solution (0.05% chlorhexidine bigluconate solution, heated to body temperature), the paste was applied indirectly in a thin layer on the dentin isolating the tooth cavity. Then, using a sterile cotton swab and a temporary filling, the therapeutic pad was isolated from the oral cavity.

All patients were given recommendations to ensure maximum success of the treatment, and the subjects were warned about the possibility of pain syndrome persisting or even worsening and the appearance of new symptoms indicating progression of the process. In these cases, the patient was asked to urgently come for an appointment for surgical (extirpation) treatment of pulpitis.

In the absence of pain and other signs of progression of the pathological process, the patient was invited for a follow-up appointment in 7-10 days. During the second visit (in 7-10 days), all control criteria were assessed and, in the absence of negative dynamics, restoration of the tooth crown was performed using a photocomposite with strict adherence to the principles of occlusal relationship.

During the study, a total of 11 teeth with acute focal pulpitis and pulp hyperemia (reversible pulpitis) were treated using a drug containing FGLA.

In the process of studying the effectiveness of a paste containing a broad-spectrum antibiotic and FGLA for maintaining pulp viability in reversible pulpitis, we conducted a comparative assessment of this drug with similar products containing a general-action corticosteroid in addition to the antibiotic, using the same assessment criteria - electroodontodiagnostics, NRS and radiography. For this purpose, 9 teeth with a diagnosis of "acute focal pulpitis" were treated.

Control examinations during rehabilitation to assess the treatment results and pulp viability indicators were carried out after 1, 3, 6 and 12 months of observation.

Results and their discussion. The use of a paste containing FGLA in patients with reversible pulpitis showed that this combination drug has a pronounced anti-inflammatory and antimicrobial effect, and also provides a rapid analgesic effect, in most cases occurring immediately after applying the paste. Thus, when treating reversible pulpitis using a paste containing FGLA, a 2.5-fold reduction in pain syndrome according to the NRS [the average value was (3.4 ± 0.21) points, which corresponded to the value of "mild pain"] was observed in 6 (66.7%) patients on the 1st day, and on the 3rd day, all patients noted the absence of pain. At the same time, 2 (22%) patients noted a significant relief of their condition almost immediately after applying the studied paste. The anti-inflammatory effect was noted in all cases on the 2nd day. The results of the examination of patients after a month showed positive dynamics of the process in the form of the absence of complaints, reactions from the periapical tissues, a short-term reaction (less than 1 min) to thermal stimuli, as well as a decrease in the numerical values of the EE indicators by an average of 1.5 times - to $(11.8 \pm 1.21) \mu A$. At long-term observation periods (3, 6, 12 months), this group of patients maintained a stable positive dynamics of the studied indicators, and only 2 (22.2%) patients at 12 months showed signs of chronic inflammation - a decrease in the electrical excitability of the pulp to 40-45 μA , the presence of attacks of spontaneous pain in the anamnesis.

The results of a comparative assessment of the effectiveness of a medicinal paste containing antibiotics and FGLA with a similar paste containing an antibiotic and a general-action corticosteroid in the treatment of reversible forms of pulpitis using the method of complete preservation of pulp viability did not reveal any significant differences in the main parameters, such as EE indicators, radiographic picture of periapical tissues in the long-term observation periods, which proves the effectiveness of the paste with FGLA in the group of combined drugs used to treat and prevent pulpitis.

The indicators characterizing the antianginal effect of the paste containing FGLA were significantly higher in relation to the comparison group. Thus, when assessing the persistence of pain syndrome after applying the paste with FGLA, the pain disappeared completely or was assessed by patients as "weak or a feeling of discomfort" in 72% of cases, while in the comparison group - only in 43% of cases. Thus, the paste containing FGLA not only provides a powerful anti-inflammatory effect, directly affecting the etiological cause of inflammation (bacterial flora) and the pathological responses of the body (pain syndrome). Such a positive moment also provides invaluable assistance to the doctor in cases where other painkillers, such as local anesthetics, are ineffective. At the same time, the absence of side effects in the form of a negative impact on the body as a whole, a stable positive result of treatment at remote observation periods, due to the content of a fluorinated corticosteroid of local action in the product, undoubtedly increases the interest in it on the part of practicing dentists of all specialties.

Conclusion. In the treatment of pulpitis of permanent teeth by the biological method, to relieve acute pain syndrome in reversible pulpitis, modern combination drugs containing antibiotics and fluoridation of local corticosteroids should be used, due to their high efficiency and safety, which is especially important in patients with aggravated somatic status.

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