



Research Paper

Relative Ratios of Methods Applied for Endodontic Treatment of Primary Teeth

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ABSTRACT

Background: Endodontic therapy in cases of emergency aims to overcome pain and control inflammatory processes. It has been scientifically established that approximately 90% of the patients of child's age, seeking for urgent dental cares, are affected by symptoms of pulp or periodontal diseases. There are various therapeutic methods appropriate for primary teeth. Basically they are divided into two groups of mortal and vital endodontic methods.

Objective: Determination of the relative ratios of methods applied for endodontic treatment of primary teeth and establishment of complications.

Material and Methods: Subject of the study are 67 children. The research has been carried out at the Faculty of Dental Medicine, Medical University-Varna, in the period 2015-2017. The researchers are specialists at Pediatric Dentistry.

Diagnostic scale - codes: d4 - dentinal lesion with pulp involvement; Irreversible caries lesions - d4. Both types of endodontic methods, mortal and vital, were used. Besides the mortal method of formalin-resorcin, vital methods of MTA and direct pulp capping were applied. On the basis of data obtained from ambulatory journals and patients' medical cards we accentuate on establishment of complications after endodontic therapy has already been performed.

After processing the results and determination of the highlights was conducted by actual survey data processing package for mathematical and statistical analysis SPSS v 20.0.

Results: The most often applied method of endodontic treatment of pulpitis in primary teeth is the formalin-resorcin procedure concerning 76,10% of all the clinical cases. At least applied is the method of direct pulp capping, established in 3,00 % of all the records. A number of 55 of these children (82,10% of them) are characterized with no complications after endodontic treatment.

Conclusion: 1. The most often applied method of endodontic treatment of pulp inflammation of primary teeth is the formalin-resorcin method (76.10% of all the cases). 2. At least applied is the method of direct pulp capping (3.00% of all the cases). 3. The smallest degree of complications is related with the formalin-resorcin method.

Keywords: endodontic treatment, pulpitis, lesions d4, primary teeth, endodontic methods

I. INTRODUCTION

Endodontic therapy in cases of emergency aims to overcome pain and control inflammatory processes. It has been scientifically established that approximately 90% of the patients of child's age, seeking for urgent dental cares, are affected by symptoms of pulp or periodontal diseases [Hasler J F, Mitchell D F, 1963, Drinnan D L, 1987, 1, 2]. There are various therapeutic methods appropriate for primary teeth. Basically they are divided

into two groups of mortal and vital endodontic methods. Formalin-resorcin method concerns the procedure of mortal amputation of pulp. Vital amputation of pulp is performed by application of calcium di-hydroxide substrates mainly [Kakehashi et al., 1965, 3], [Langeland 1987, 4], [Seltzer et al., 1963, Guthrie et al. 1965, 5, 6].

II. PURPOSE

Determination of the relative ratios of methods applied for endodontic treatment of primary teeth and establishment of complications.

III. MATERIAL AND METHODS

Subject of the study are 67 children. The number of girls included is 37 and boys amount to 30 representatives of the research. The average age of all the participants is 5.1 ± 0.8 . Child's minimal age equals to 4, maximal age is 6, with predominance of participants of the age of 6. The research has been carried out at the Faculty of Dental Medicine, Medical University-Varna, in the period 2015-2017, with the permission of the University Scientific Research Committee and informed consent signed by each parent. The selection of children is – with d4 - dentinal lesion with pulp involvement.

The researchers are specialists at Pediatric Dentistry.

Diagnostic scale - codes: d4 - dentinal lesion with pulp involvement; Irreversible caries lesions - d4.

Data analyzed in this study are taken from ambulatory journals and patients' medical cards. Only clinical cases with the diagnosis of D4, with complicated carious lesions, namely pulpitis, are recorded. Non-carious lesions, areas of hypo-mineralization, carious findings of D1, D2 and D3, as well as periodontitis were excluded from the study. Both types of endodontic methods, mortal and vital, were used. Besides the mortal method of formalin-resorcin, vital methods of MTA and direct pulp capping were applied. On the basis of data obtained from ambulatory journals and patients' medical cards we accentuate on establishment of complications after endodontic therapy has already been performed. After processing the results and determining the highlights, the actual study was performed by processing the data with a mathematical-statistical processing package SPSS v 20.0. The U test using Man and Whitney method, X^2 test, and Pearson correlation are used.

IV. RESULTS

The most often applied method of endodontic treatment of pulpitis in primary teeth is the formalin-resorcin procedure concerning 76,10% of all the clinical cases. At least applied is the method of direct pulp capping, established in 3,00 % of all the records (Figure 1).

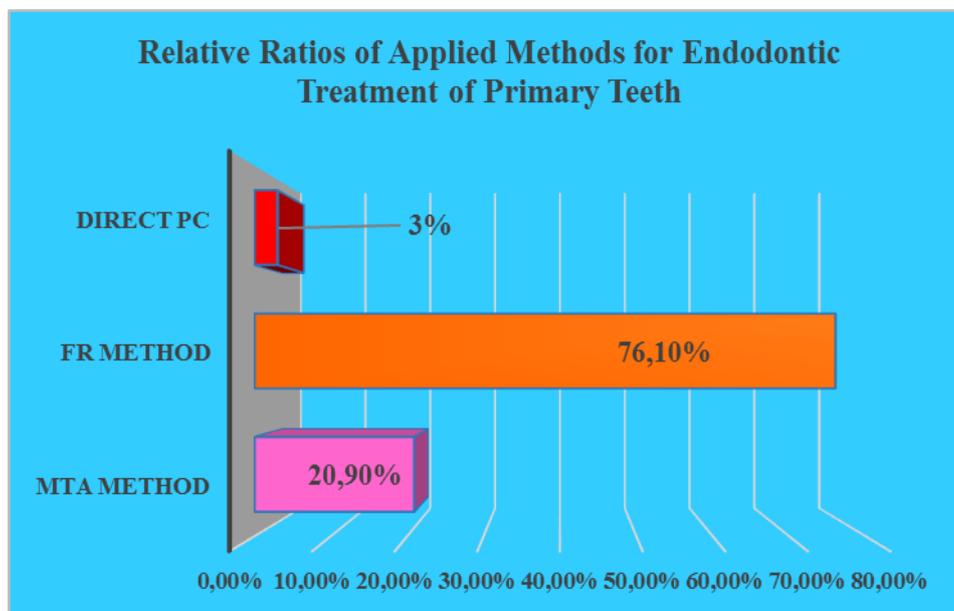


Figure 1. Relative ratios of applied methods for endodontic treatment of primary teeth

Legend: DIRECT PC = method of direct pulp capping;

FR METHOD = formalin-resorcin method;

MTA METHOD = vital method of MTA usage ;

A number of 55 of these children (82,10% of them) are characterized with no complications after endodontic treatment. A ratio of 14,90 % of the participants, namely 10 children, are affected by one lesion of complication. Two children (3% of all the participants) suffer from 2 complications of pulp therapy procedures (figure 2).

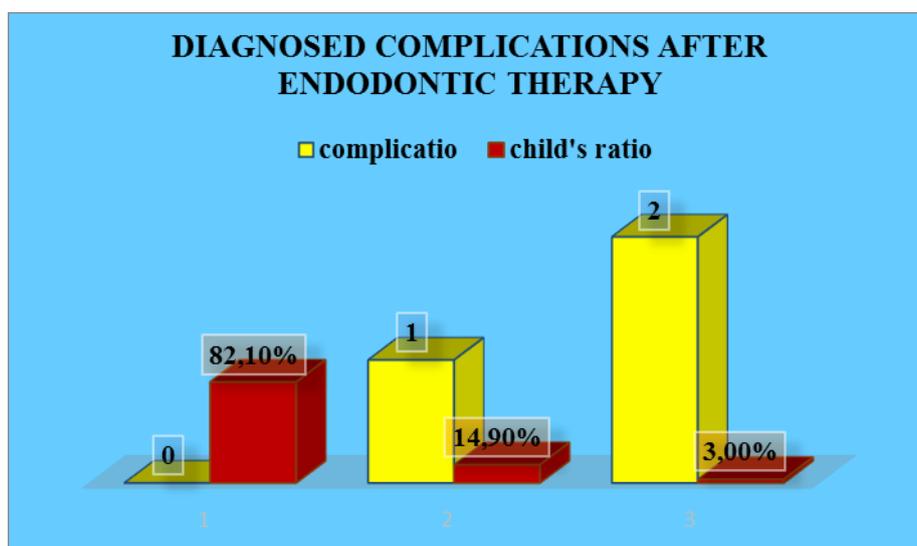


Figure 2. Diagnosed complications after endodontic therapy

Regarding all the complicated clinical cases of pulp treatment following the principles of mortal therapy with highest frequency are the patients with diagnosed Periodontitis chronica granulomatosa diffusa-25,00 % of the total number of complications. Regarding the primary teeth with applied vital method of MTA and direct pulp capping, complications of necrosis pulpae concern 75,00 % of all the treated teeth.

V. DISCUSSION

Scientists discuss about various methods of endodontic treatment of primary teeth, but we prefer the application of the mortal method of formalin-resorcin because of its successful therapeutic results. In the context of contemporary trends of accentuation upon vital methods of pulp therapy regarding deciduous teeth of primary and mixed dentition, we ascertain that these therapeutic principles are related with a definite risk of complications of pulp necrosis. On the other hand, mortal method of formalin-resorcin application is characterized with a slight degree of complications affecting the pulp and periodontal tissues. Clinical findings and results sustain the tendency of implementation of the formalin-resorcin therapy. Retrospective researches of teeth with diagnosed lesions of apical periodontitis show that approximately 50,00% of all the affected teeth are characterized with no symptoms of pain, meaning clinical findings of irreversible pulpitis, without any subjective effects [Michaelson & Holland 2002, 7]. Different authors perform studies about relations between bacterial infection into deepness of the pulp and pulp injury. The first symptoms of inflammation are recorded for lesions affecting only enamel [Brännström, Lind 1965, 8]. While carious lesion reaches half of the width of dentin, in most of the cases there is no significant effect upon pulp [9]. If the remaining solid dentin is with width more than 0,5 mm, pulp is regarded as non-affected and not infected [Reeves, Stanley 1966, Langeland 1987, 4, 10, 11, 12].

VI. CONCLUSION

1. The most often applied method of endodontic treatment of pulp inflammation of primary teeth is the formaline-reorcin method (76.10% of all the cases).
2. At least applied is the method of direct pulp capping (3.00% of all the cases).
3. The smallest degree of complications is related with the formalin-resorcin method.

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