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Study of the Dental Practitioners' Criteria for the Selection of Restorative Materials for Primary Teeth

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Abstract: ***The appropriate choice of restorative material is essential for the successful dental treatment in children. This choice is rarely based on well-defined criteria and usually depends on the personal preference of the clinician. The aim of this research is to study the opinion of dental practitioners according the main criteria for the selection of restorative materials in the treatment of caries in primary teeth. Materials and methods: A direct anonymous poll is conducted within 75 trainees in dental medicine and 160 dental practitioners with different professional experience and qualification. The factors influencing their choice for restorative material are studied. Results: Regardless of the experience and qualification of respondents, the choice of restorative material for primary teeth is entirely subjective and is not based on clear criteria according to the patient's individual risk profile, which is a prerequisite for the failure of the treatment of dental caries.***

Keywords: primary teeth, restorative material

1. Introduction

Contemporary approach to the treatment of dental caries requires it to be treated as a disease, by eliminating the causes of its occurrence, not only by mechanical removal of damaged tissues and replacing them with restorative material. Even with perfectly made restoration, if the causes that lead to the appearance of a primary carious lesion are not controlled, the pathological factors will inevitably lead to the development of caries adjacent to a restoration, which is considered to be the main reason for the failure of dental treatment [1],[2],[3]. Regardless of the type of restorative material, the durability of dental restorations in primary and permanent teeth in children is less than that in adults [4. The appropriate choice of restorative material is essential for the successful dental treatment in children. With a wide variety on the market of dental materials with different characteristics, this choice is often subjective and depends on the personal preference of the clinicians. According to many authors, the choice of restorative material may affect the appearance and development of caries adjacent to an obturation [5],[6],[7],[8]. The choice of restorative material, especially in childhood, is rarely based on well-defined criteria [9], [10]. According to AAPD 2005-2006, restorative treatment in children should be based on the results of a thorough clinical exam and be an ideal part of a detailed treatment plan considering the stage of development of dentition, individual caries risk, level of oral hygiene, cooperation of parents and patients [11].

Objective

To study the opinion of dental practitioners according the main criteria for the selection of restorative materials in the treatment of caries in primary teeth.

2. Materials and methods

A direct anonymous poll is conducted within 75 trainees in dental medicine and 160 dental practitioners with different professional experience and qualification. The factors influencing their choice for restorative material are studied: behavior of the child, total caries experience, oral hygiene, control of salivation, properties of the restorative material or the specific clinical findings (features of the decay, cavity preparation, type of dentition). The inclusion of trainees in dental medicine aims to study their knowledge of the indications for the use of different types of restorative materials, patient related factors influencing the choice of dental material and also to compare the teaching of this matter to the actual situation inthe clinical practices of dentists with different professional experience and qualification.

3. Results

Highest share of the surveyed (54.40%) are respondents with practical experience more than 20 years, 10 to 20 years have 20.00% of the sample, and dental practitioners with experience from 5 to 10 years are 11.90%.Trainees in dental medicine represent 32,30% of the surveyed, the general practitioners are 54,40%, pediatric dentists - 5,50% and dentists with another specialty are 7,66% of respondents. The largest percentage of the surveyed, for restoration of primary teeth affected from caries, prefer most commonly aesthetic restorative materials – 46,40%, followed by those who prefer dental amalgam – 26,80%.Only aesthetic obturations for primary teeth is the choice of 17,00% of dental practitioners surveyed, and 1,30% of them are using only dental amalgam.

Fig. 1 presents the positive answers to the question: "Which factors determineyour choice of restorative material for primary teeth?".The results show that for 75,20% of the surveyed dental practitioners, the features of the decay /activity, depth, location/ determines their choice of restorative material, for 59,80% the choice depends mainly on the type of dentition, for 55,60% the properties of the material is the leading factor, and for about 53,40% of the respondents most important is the child's behavior.

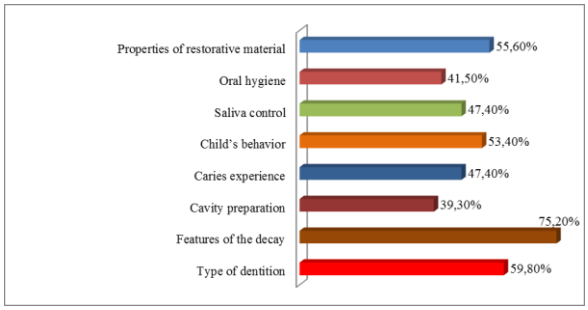

Figure 1: Factors determining the choice of restorative material for primary teeth

In less than half of the respondents–47,40%, importance when choosing restorative material for children have common factors such as patient's total caries experience or control of salivation that are supposed to be one of the leading criteria.Disturbing is also the low relative share of dentists who are affected by the level of oral hygiene of the patient - 41.50% and also the cavity preparation which is relevant for only 39,30% of the respondents.

We also study whether the duration of professional experience of dental practitioners influences the factors determining the choice of obturation material. It was found that with the increase of professional experience, the features of the decay (depth, activity, location), becomes significantly more important for the selection of restorative material. For dental practitioners with work experience from 1 to 5 years, this factor is taken into account from 45,50% of those surveyed, for dental practitioners with 5 to 10 years of work experience, this percentage is 78.90%, and for those with over 20 years - 73.30%. With the increase of professional experience, the type of dentition loses its influence as a factor when choosing restorative material on account of the growing influence of the nature of the decay. For 72,70% of practitioners with shorter experience (1 to 5 years), the type of dentition is a leading indicator when choosing dental material, and for dentists with practice more than 20 years, this share falls to 51,20%. The results show that qualities of restorative material are of greater importance to dental practitioners with less experience than those with longer professional practice.

The impact of the professional qualification of dental practitioners on the selection of restorative material for primary teeth is also investigated. For dental practitioners with specialty in pediatric dentistry, the selection of the restorative material depends mainly on the features of the decay (depth, activity, location) - 92.30%.This factor is of less importance to general practitioners. For 76.90% of pediatric dentiststhe type of dentition is the second factor of importance, compared to only about 56,00% of general dental practitioners and other dental specialists influenced by this indicator. Approximately 62,00% of pediatric dentists say, that their choice of filling material is influenced by the total caries experience and the oral hygiene of the patient. It should be noted that the properties of the restorative material and the control of saliva are factors that are more important to most of the trainees in dental medicine, than to general practitioners and other specialists.

4. Discussion

Regardless of the experience and qualification of respondents, the choice of restorative material for primary teeth is entirely subjective and is not based on clear criteria according to the patient's individual risk profile, which is a prerequisite for failure of the treatment of dental caries. The results obtained by us correspond to the data from other studies showing the main use of aesthetic restorations in primary teeth[5],[12],[13],[14].The presence of a specialty in Pediatric Dentistry is a factor that determines more complex approach in the treatment of dental caries in childhood and proper assessment of each individual clinical case. Trainees in dental medicine have a very good knowledge of the clinical criteria determining the correct choice of restorative material for primary teeth, which is essential for the quality of treatment.

5. Conclusion

Successful treatment of dental caries in children depends on a number of factors mainly related to the general risk profile of the patient, the characteristics of the pathological process and the qualities of the restorative material. An individual approach is required considering the possible risk factors for the failure of restorative treatment.

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