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Importance of the carious activity of the parents in connection with premature tooth loss in their children

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Abstract

The carious activity of parents is a risk factor for carious lesions and premature extraction in children. The aim of this study is to investigate the correlation between the DMFT index of the parents and premature tooth loss in their children.

Methods and materials: The study covers 140 children between 6 and 9 years old. The control group consists of 50 children and the clinical group consists of 90 children with prematurely extracted teeth. The patients from the clinical group were divided into three groups of 30 patients. A special questionnaire was filled by the parents of the examined children about their own dental status. We determine the dental condition of the parents as good when they have DMFT index less than 3; as satisfactory – DMFT – 3 or 4; and as bad – DMFT more than 4. A statistically significant difference was found in the distribution of groups depending on the condition of the teeth of parents ($P = 0.001$ for the mothers and $P < 0.0001$ for the fathers). While in the control group the condition of the teeth of the parents is good or satisfactory, in the groups with prematurely extracted teeth, a significant proportion of the parents are with bad dental status. Conclusions: The results are indicative of the possibility of the presence of a genetic predisposition for caries activity, respectively risk of premature tooth loss, as in the children from the study group or lack of caries protective behavior in the families.

Keywords: carious activity, premature tooth loss

Introduction

Acording to modern concepts tooth decay is a ”behavioral disease with bacterial component” (1) (2012 FDI World Dental Federation).
This definition puts forward the possibility of establishing and adjusting behavior, which is enough to prevent bacterial involvement and development of carious lesions. The correction of behavior is a prerequisite for preventing the development of caries (2). Parents play the main role in educating their children in carious protective behavior. The parents' carious activity is one of the main risk factors for the development of the carious lesions and premature tooth loss respectively (3,4). From the available literature indirect conclusions can be drawn about the awareness of the population of the proper health behavior in terms of oral health (Peneva, 2008). It has been proved that the large number of carious teeth in parents is associated with large carious activity and premature extraction in children too (2,5). A great percentage of children (83%) have an intermediate consumption of carbohydrates and do not know that this is the cause of dental caries; 88% of children are not provided with endogenous fluorine prophylaxis (6). The family is a key factor in building healthy habits. The health habits of parents have a significant influence and engage children in participating reciprocally in the family. Parents serve as a model. Their impact is much greater than other social models (7,8).

Aim

The aim of this study is to investigate the correlation between the DMFT index of the parents and premature tooth loss in their children.

Material and Methods

The study covers 140 children between 6 and 9 years old. The control group consists of 50 children and the clinical group consists of 90 children with prematurely extracted teeth. The patients from the clinical group were divided into three groups of 30 patients in connection with the period of premature tooth loss.

- Patients that have lost one or more tooth extracted in the dental clinic or that come to the clinic during the first 2 months after the extraction.
- Patients with premature temporary teeth extraction 6 months before they come to the dental office.
- Patients with premature temporary tooth extraction more than one year before they come to the dental office.

The control group consists of 50 children with intact denture. The children from the control group are the same age as the children from the clinical groups.
A special questionnaire was filled by 264 parents (132 mothers and 132 fathers) of the examined children about their own dental status. We determine the dental condition of the parents as good – when they have a DMFT index less than 3; as satisfactory –DMFT – 3 or 4; and as bad – DMFT more than 4. The other part of the questionnaire filled by the parents concerned their children - the reason of the premature tooth loss. The only reason in our study was caries and their complications. We had no children with trauma or periodontal diseases.

Table 1. Distribution of parents of children in the surveyed groups according to their dental status

Groups	What is the dental condition of the mothers						Total	
	Good		Satisfactory		Poor			
	Number	%	Number	%	Number	%	Number	%
Control group	37	77.1	10	20.8	1	2.1	48	100
Group 1	14	50.0	9	32.1	5	17.9	28	100
Group 2	15	55.6	7	25.9	5	18.5	27	100
Group 3	7	24.1	17	58.6	5	17.2	29	100
Statistical significance	χ^2=24.08, df=6, P=0.001							

Groups	What is the dental condition of the fathers						Total	
	Good		Satisfactory		Poor			
	Number	%	Number	%	Number	%	Number	%
Control group	26	54.2	21	43.8	1	2.1	48	100
Group 1	6	21.4	12	42.9	10	35.7	28	100
Group 2	2	7.4	15	55.6	10	37.0	27	100
Group 3	4	13.8	12	41.4	13	44.8	29	100
Statistical significance	χ^2=35.55, df=6, P<0.0001							

* This question has missing answers and that is why the total number in the groups is smaller

Results and discussion

A statistically significant difference was found in the distribution of groups depending on the condition of the teeth of parents (P = 0.001 for the mothers and P < 0.0001 for the fathers). While in the control group the condition of the teeth of the parents is good or satisfactory, in the groups with prematurely extracted teeth, a significant proportion of parents are with a bad dental status (Table 1).
The biggest percentage – 77,1% of the mothers of children from the control group are in a good dental status. About 43% of the mothers of the children from the other 3 groups have good dental health. 54,2% of the fathers of children from the control group are in a good dental status and only 14,2% of the fathers of children from the 3 studied groups are in good oral health. Our results demonstrate that the children of the parents with good oral health also have better dental status (control group) than children whose parents are with poor dental health (examined groups). These results corroborate many other studies (9,10,11,12). Dental caries is the main reason for premature tooth loss and it is a behavioral disease. The lack of preventive habits in parents, such as regular oral hygiene and visits in the dental office, rare consumption of carbohydrates and fluorine prophylaxis and insufficient knowledge of dental prevention, influence the oral health of their children and often leads to premature tooth loss.

Conclusion

These results show that it is possible for the presence of genetic factors for caries predisposition, respectively risk of premature tooth loss in children from the study group, or lack of caries protective behavior in their children's families to be considered serious risk factors. Dentists need to work both with children and their parents in the direction of preventive behavior and habits in order not to avoid early tooth loss in children.

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