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Reporting Caries in The Stage of Destruction - D3mft/S+D4mft/S

Dr. Dobrinka Damyanova Phd[1]
[1]*assistant Professor, Medical University-Varna, Bulgaria, Faculty Of Dental Medicine, Department Of Pediatric Dental Medicine*

Abstract
Background: *Dental caries is one of the most common oral diseases affecting people of all ages. According to modern understanding of caries disease, tooth decay is defined as a process on setting long before one reaches a clinically detectable lesion that is just one of the symptoms. Like any process, caries can be controlled, regulated and modeled by creating suitable conditions in oral environment.*
Objective: *To conduct an epidemiological study on the prevalence of caries d3mft/s+d4mft/s of temporary teeth, depending on the overall tooth decay in two group children.*
Material and Methods: *Epidemiology of dental caries of temporary teeth and teeth surfaces - dmft and dmfs and frequency.*
Results: *We found a statistically significant difference between the two study groups / criterion: P< 0.05/. The children in the treated group had a higher average number of cavitated caries lesions d3 + d4 of their temporary teeth (d3mft/s+d4mft/s=3.81) compared to the control group children (d3mft/s+d4mft/s =2.96) who were not treated by us operatively and non-invasively.*
Conclusion: *With age advancing there increases the number of active lesions, as lighter ones turn into heavier (d1a in d1b), d1 to d2, d2 to d3. The operative technique for cavitated lesions of temporary teeth is minimally invasive cavity preparation.*
Keywords: *caries, cavitated lesions, temporary teeth, minimally invasive*

I. Introduction

Dental caries is one of the most common oral diseases affecting people of all ages. According to modern understanding of caries disease, tooth decay is defined as a process on setting long before one reaches a clinically detectable lesion that is just one of the symptoms [1]. Like any process, caries can be controlled, regulated and modeled by creating suitable conditions in oral environment. The diagnosis of caries disease develops in two main areas – detection of the earliest changes in the enamel and detection of the factors leading to the development of the process itself [6].

Objective: To conduct an epidemiological study on the prevalence of caries d3mft/s+d4mft/s of temporary teeth, depending on the overall tooth decay in two groups children.

II. Material and Methods

Epidemiological study on the prevalence of dental caries of temporary teeth (at initial diagnostic threshold d1b), depending on the overall tooth decay in children aged 4 to 6 years
1. Epidemiology of dental caries of temporary teeth and teeth surfaces – d3mft/s and d4mft/s.

III. Caries status

Subject of the monitoring are 200 children from Varna, aged 4 to 6 years, divided equally in age standardized groups with an equal number of boys and girls. Criteria for inclusion of children: clinically healthy, without general and systemic diseases without gingival and oral mucosal diseases; accompanied by their parents, regularly visiting our ambulatory room. Patients were divided into two groups of 100 children. Methodology: A dental status is assessed and registered by the WHO criteria. Units of observation: deciduous teeth and surfaces with/without carious lesions, active carious lesions at the level of a diagnostic threshold level d1b.
Diagnostic Scale – codes:
d1b - white enamel lesions visible without drying
d2 - white enamel cavitated lesion
d3+d4 - dentin lesion with and without affecting the pulp
A - active (d1b, d2)
NA - inactive (d1b, d2)
Reversible carious lesions - (d1a, d1b, d2)
Irreversible carious lesions - d3 and d4

Statistics: Statistical methods for data processing – Stat Soft, Inc., STATISTICA Manual (Data analysis software system), Version 10.0, 2010.

- Comparative analysis (evaluation of hypotheses)
- Student's t-test
- Graphical and tabular method of displaying results obtained

IV. Results

The essential difference in tooth decay of the teeth in both jaws was proven by the T-test (t = 4.10, p<0.01), as in the upper jaw was observed a higher average value of dmft index (4.46) compared to the lower jaw (dmft = 3,46).

Tab. 1. Comparative Analysis Of D3mf/T+D4mf/T Irreversible, Cavitated Lesions Of The Two Study Groups

T-test for Independent Samples **Note:** Variables were treated as independent samples									
	Mean - Group 1	**Mean - Group 2**	**t-value**	**dmft/s**	**p**	**Valid N - Group 1**	**Valid N - Group 2**	**Std.Dev. - Group 1**	**Std.Dev. - Group 2**
d3mft/s+d4mft/s - Group 1 **d3mft/s+d4mft/s - Group 2**	3,81	2,96	1,93	199	0,049504	100	101	3,073822	3,14299

We found a statistically significant difference between the two study groups / criterion: P< 0.05/.

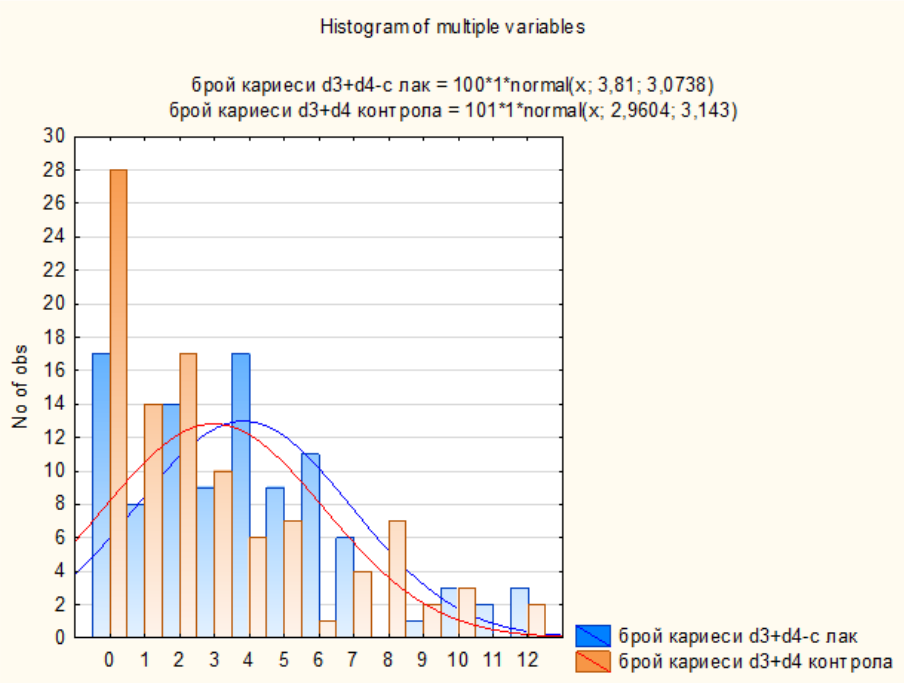

Fig. 1. Joint histogram for visual comparison of the test and control group - by caries d3mft/s+d4mft/s and the need for surgical treatment of the children under study (Blue line-number of caries d3mft/s+d4mft/s of the treated group; Red line-number of caries d3mft/s+d4mft/s of the control group)

The study of cavitated caries lesions in treatment and non-treated children showed a significant difference in caries (t = 1.93, p< 0.05), with the first group of children having a higher d3mft/s+d4mft/s index (3.81). The children in the treated group had a higher average number of cavitated caries lesions d3mft/s + d4mft/s of their temporary teeth (3.81) compared to the control group children (2.96) who were not treated by us operatively and non-invasively.

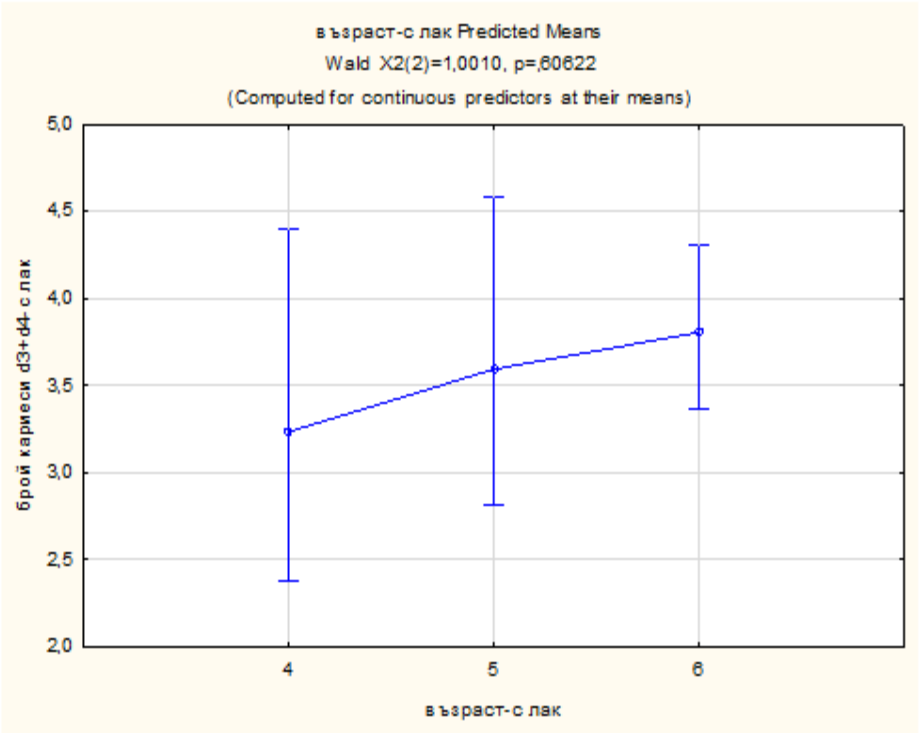

Fig. 2. Distribution by age (4, 5 and 6 years) and number (N) of cavitated lesions d3+d4 for the treated group

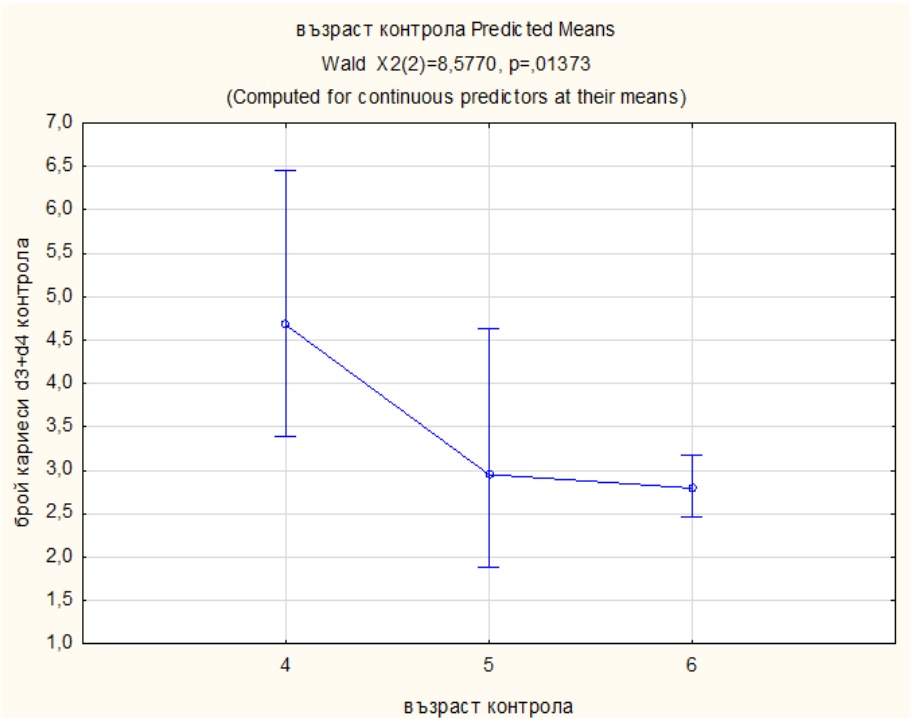

Fig. 3. Distribution by age (4, 5 and 6 years) and number of cavity lesions d3+d4 for the control group

V. Discussion

Composite resins came on the market in the early 1970s and have been modified since then in an attempt to improve their properties. The development of acid etching at the time that these materials were introduced has ensured that they have performed reasonably well in terms of marginal seal. They are sensitive to variations in technique and take longer to place than equivalent amalgam restorations. They must be placed in a dry field [2,3].

The long-term success of composite resins is jeopardized by their instability in water. The best materials have maximum inorganic filler levels and low water absorption, but will deteriorate over time. The longevity of composite material appears to be similar to that of RMGIC or compomer for occlusal and small proximal restorations in primary teeth [4,5,6]. The NECAT study showed inferior results compared with amalgam for the restoration of permanent molars in a population aged 6–10 years.

VI. Conclusion

1. With age advancing there increases the number of active lesions, as lighter ones turn into heavier (d1a in d1b), d1 to d2, d2 to d3.
2. All reversible lesions could regress.
3. The operative technique for cavitated lesions of temporary teeth is minimally invasive cavity preparation.

Recommendation

To conduct timely and early diagnosis to cover carious lesions in their early phase by applying preventive and non-invasive treatment that saves time, pain and prevents child from complicated caries.

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