Consumption of drinks and the effect on the intensity of dental erosions in population at the age from 30 – 50 years

Denkova N.[1], Iljovska S.[2] ,Denkov N [3].
[1]-Department of Pediatric Dentistry, University Goce Delcev in Stip, Macedonia
[2]-Deparment of Pediatric Dentistry, Ss. Cyril and Methodius University in Skopje, Macedonia
[3]-Dental Office Dr. Meri Denkova in Stip, Macedonia
denkovanatasa@gmail.com,iljovskasnezana@yahoo.com, dr_denkov@hotmail.com

Summary: The aim of our study was to establish the effects of carbonated drinks and fruits drinks on the onset and the level of dental erosions on the central incisors and the first permanent molars.

Material and methodology: In order to objectify the existence of dental erosion among the population, research was made in different urban environments in the city of Shtip and its surrounding. The total sample consisted of 31 respondents (17 male and 14 female) with positive signs of dental erosion.

In the methodology we used specially constructed questionnaires in which we input the data about the consumption of carbonated and fruits drinks and from a clinical standpoint we input data about the depth of the dental erosions according to teeth and surfaces.

Results: The monitoring of the distribution of dental erosions that were diagnosed on the central incisors and the first permanent molars, in correlation to the gender of the examinees, did not show a significant difference ($p>0.05$).

The results we got for the existence of dental erosions according to surfaces of the examined teeth, in correlation to the gender of the examinees, did not show a significant difference ($p>0.05$).

The correlation between the use of carbonated drinks and dental erosions on the central incisors was with a medium strong negative insignificant correlation $p>0.05$.

The data which represents the association of dental erosions, according to tooth surface, and the consumption of carbonated drinks during the whole week and of fruit drinks during the whole day,on the central incisors, showed, that there is no statistically significant difference $p>0.05$.

In the examined correlation between the consumption of carbonated drinks and dental erosions of the first permanent molar, we can see that there is a medium strong negative significant correlation $p<0.05$,where the increase in the consumption of carbonated drinks is followed by a decline in the level of erosive changes.

In the presented distribution of data which takes into consideration the use of fruits drinks and dental erosions diagnosed on the first permanent molar, there is no significant difference ($p>0.05$).

The correlation between the use of fruit drinks and dental erosions of the first permanent molar was with a medium strong negative significant correlation $p<0,05$, where the increase of the use of fruit drinks is followed by a decrease in the level of erosive changes.

We can conclude that it is necessary to carry out a study, that would include the most influential etiological factors, which would help in the preparation of preventive strategies.

Key words: dental erosions, carbonated drinks, fruit drinks

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Introduction

Dental erosion is defined as progressive non-carious condition of the teeth characterized with irreversible pathological loss of the surface of dental tissue as a result of chemical processes and does not include bacterial infections. Over the last two decades, dental erosion has become a significant clinical problem.[1]

The prevalence of dental tissue loss is a frequent clinical problem which is represented by 97%. The recent literature states that the erosion prevalence is most common and varies within 35-57%. [2]

The etiology of erosion is polyvalent and not entirely explained, it is mainly based on mutual influence of chemical (consumption of acidic foods and acidic drinks and fruit, more than twice a day, symptoms or old findings for interstitial reflux, frequent vomiting, eating disorder, vitamin C chewable tablets, drinks that contain iron and acids from the air) and biological factors (flow and composition of saliva, buffering capacity of saliva, creating of pellicle, composition and morphology of teeth and soft tissues, eating habits and so on). [3,4,5]

The aim of our study was to establish the effects of carbonated drinks and fruits drinks on the onset and the level of dental erosions on the central incisors and the first permanent molars.

Material and methodology

In order to objectify the existence of dental erosion among the population, research was made in different urban environments in the city of Shtip and its surrounding. The total sample consisted of 31 respondents (17 male and 14 female) with positive signs of dental erosion.

The examinations were made on a dental chair using a dental mirror and CPITN probe with which we cover the entire surface of the teeth to check the loss of enamel on natural daylight.

The examinations were carried out with the help of a dental mouth mirror and a CPITN probe with which we examined the whole surface of the teeth in order to assess the loss of dental enamel.

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For all respondents we prepared specially designed questionnaire divided into two parts, the first was clinical research and the second part was structured questionnaire about the habits of consuming soft drinks and fruit juices.

The data was input into the specially designed questionnaires, which consisted of clinical examinations and data about the consumption of carbonated drinks and fruits drinks

1. Clinical procedures

The diagnosing of dental erosion was made with visual exam and in the questionnaires we classified them according to the recommendations of Smith and Knight and later Millward et al. made small changes, in which the following criteria were taken into account:[6]

0 = Without lesions on the enamel of the teeth surface

1 = Only superficial loss of teeth enamel

2 = Enamel loss, dentin exposed to less than one third of the surface of the tooth (including buccal, lingual and occlusal surfaces or incisal edges of the teeth)

3 = Enamel loss, dentin exposed and losing more than a third of the tooth surface (including buccal, lingual and occlusal surfaces or incisal edges of the teeth), without exposing the pulp

4 = Complete enamel loss, exposed pulp or secondary dentin (including buccal, lingual and occlusal surfaces or incisal edges of the teeth)

9 = Teeth excluded from the analysis (anodontia or non-grown tooth, partly grown, teeth with large restorations or large carious lesions).

In the tests we included only the central incisors and the first permanent molars in which buccal, lingual, occlusal surfaces and incisal edges of the teeth were inspected.

2. Structured questionnaire

It contained the habits of consuming soft drinks and fruit juices.

A. According to the respondents' answers about consuming soft drinks we made the notation as follows:

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1 = consuming soft drinks 2 times per week or less

2 = consuming soft drinks 3-5 times a week

3 = consuming soft drinks 6 or more times a week

B. According to the respondents' answers about consuming fruit juices we made the notation as follows:[7]

1 = rarely or never consuming fruit juices throughout the day

2 = those who consume fruit juices once a day

3 = those who consume fruit juices several times a day

The data was noted and analyzed using the statistical package version 10.5, descriptive analysis including average value, standard deviation, percentage, Student's t test and correlation test (Spearman's Correlation) where the significance of the results was considered $p < 0.05$.

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Results

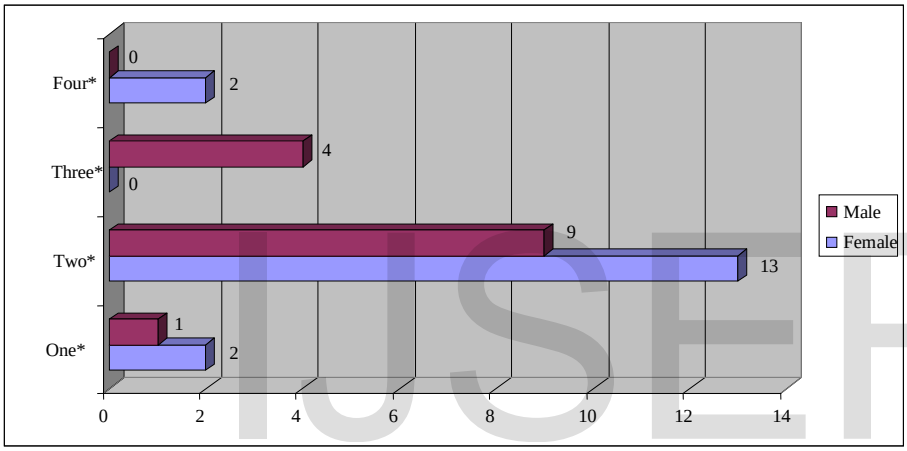
17 female examinees had erosions on the central incisors, from which, 2 (6.5%) examinees had superficial loss of dental enamel, 13(41,9%) examinees had loss of dental enamel with exposure of the dentin in less than one third of the tooth surface and 2 (6.5%) examinees had total loss of the dental enamel, exposed pulp or secondary dentin.

14 male examinees had erosions on the central incisors, from which, 1(3.2%) examinee had superficial loss of the dental enamel, 9(29,0%) examinees had loss of the dental enamel with exposure of the dentine in less than one third of the tooth surface and 4(12.9%) examinees had total loss of the dental enamel, exposed dentin and loss of dental enamel in more than one third of the tooth surface without pulp exposure (table and graph 1).

In the presented distribution of dental erosions that were diagnosed on the central incisors for the Fisher's Exact test=6,20 and p>0,05 (p=0,067/0,060-0,073) in correlation to the gender of the examinees there is no significant difference.

Table 1. Gender / Dental erosions / Central incisors

			Central incisors				Total
			Score 1	Score 2	Score 3	Score 4	
Gen-der	Female	Count	2	13	0	2	17
		% of Total	6,5%	41,9%	,0%	6,5%	54,8%
	Male	Count	1	9	4	0	14
		% of Total	3,2%	29,0%	12,9%	,0%	45,2%
Total		Count	3	22	4	2	31
		% of Total	9,7%	71,0%	12,9%	6,5%	100,0%



Graph 1. Gender / Dental erosions / Central incisors

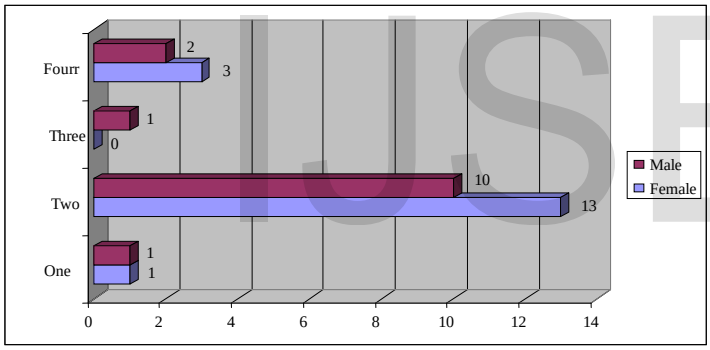
The data which takes into consideration the dental erosions of the first permanent molar in 17 female examinees, shows that 1 (3,2%) examinee had superficial loss of dental enamel, 13 (41,9%) examinees had loss of dental enamel with exposed dentin in less than one third of the tooth surface, and 3(9,7%) examinees had total loss of the dental enamel with an exposed pulp.

14 male examinees had erosions on the first permanent molar, from which, 1(3.2%) examinee had superficial loss of the dental enamel, 10(32,3%) examinees had loss of the dental enamel with exposure of the dentine in less than one third of the tooth surface, 1(2.2%) examinee had loss of the dental enamel, exposed dentine and loss of dental enamel in more than one third of the tooth surface without pulp exposure, and 2 (6,5%) examinees had total loss of dental enamel with an exposed pulp (table and graph 2).

In the presented distribution of dental erosions that were diagnosed on the first permanent molar, for the Fisher's Exact test=6,20 and p>0,05 (p=0,067/0,060-0,073) in correlation to the gender of the examinees there is no significant difference.

Table 2. Gender / Dental erosions / First permanent molar

			FPM				Total
			Score 1	Score 2	Score 3	Score4	
Gen-der	Female	Count	1	13	0	3	17
		% of Total	3,2%	41,9%	,0%	9,7%	54,8%
	Male	Count	1	10	1	2	14
		% of Total	3,2%	32,3%	3,2%	6,5%	45,2%
Total		Count	5	2	23	5	31
		% of Total	16,1%	6,5%	74,2%	16,1%	100,0%



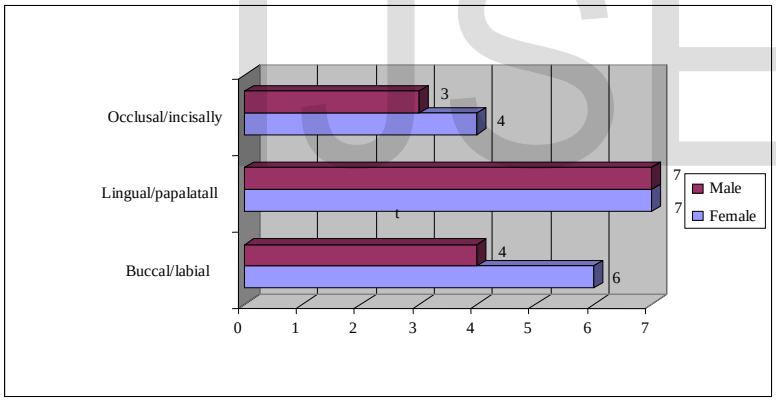
Graph 2. Gender / Dental erosions / First permanent molar

The data which applies to the dental erosions according to tooth surface shows that from 17 female examinees, 6 (19,4%) examinees had dental erosions on the buccal / labial dental surface, 7 (22,6%) examinees had erosions on the lingual / palatal dental surface and 4 (12,9%) examinees had dental erosions on the occlusal / incisal dental surface. From a total of 14 male examinees, 4 (12,9%) examinees had dental erosions on the buccal / labial dental surface, 7 (22,6%) examinees had erosions on the lingual / palatal dental surface and 3 (9,7%) examinees had dental erosions on the occlusal / incisal dental surface. (Table and graph 3).

In the presented distribution of dental erosions according to the surface, for Fisher's Exact test=0,37 and p>0,05 (p=0,901/0,893-0,908) in correlation to the gender of the examinees there is no significant difference.

Table 3. Gender / Surface

			Surface			Total
			Buccal / labial	Lingual / Palatal	Occlusal / Incisal	
Gender	Female	Count	6	7	4	17
		% of Total	19,4%	22,6%	12,9%	54,8%
	Male	Count	4	7	3	14
		% of Total	12,9%	22,6%	9,7%	45,2%
Total		Count	10	14	7	31
		% of Total	32,3%	45,2%	22,6%	100,0%



Graph 3. Gender / Tooth Surface

The data which applies to the consumption of carbonated drinks and dental erosions of the first incisors, shows that 10 (32,3%) examinees which used carbonated drinks with or without sugars 2 times or less in one week, from which, 1 (3,2%) examinee had superficial loss of dental enamel, 5 (16,1%) examinees had loss of dental enamel with exposed dentin in less than one third of the tooth surface, 2 (6,5%) examinees had loss of dental enamel with an exposed dentin in more than third of the surface of the tooth without exposure of the pulp, and 2 (6,5%) examinees had total loss of dental enamel with an exposed pulp or secondary dentin.

From 19 patients which used carbonated drinks with or without sugar 3-5 times a week, 2 (6,5%) patients had superficial loss of dental enamel, 15 (48,4%) patients had loss of enamel and exposed dentin on less than one third of the tooth surface and 4(7,7%) patient had loss of dental enamel, exposed dentin and loss of more than one third of the surface of the tooth without exposure of the pulp.

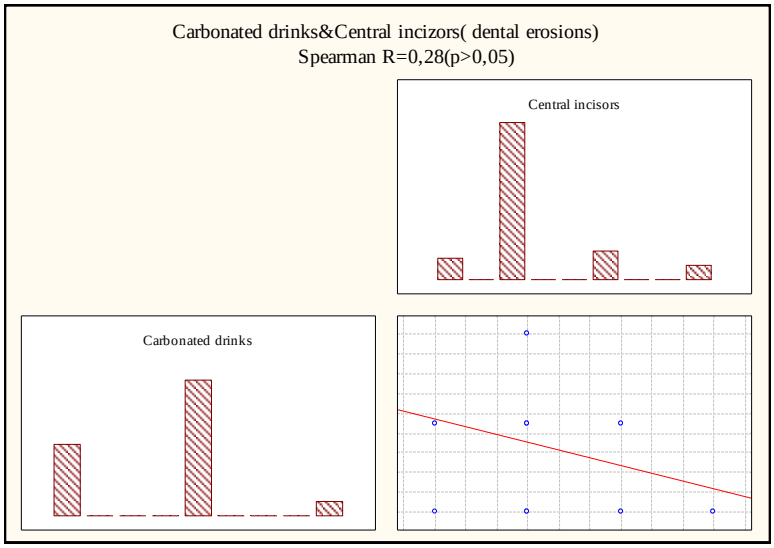
In 2 (6,5%) patients which consumed carbonated drinks with or without sugar 6 or more times a week, we diagnosed loss of dental enamel, exposed dentin on less than one third of the tooth surface. (table and graph 4)

In the presented distribution of data which presents the consumption of carbonated drinks and dental erosions diagnosed on the central incisors, for Fisher*s Exact test=6,33and p>0,05(p=0,36/0,344-0,369) there is no significant difference.

Table 4 Carbonated drinks / Dental erosions / Central incisors

			Central incisors				Total
	During the week		Score 1	Score2	Score 3	Score 4	
Carbonated drinks	2 times or less	Count	1	5	2	2	10
		% of Total	3,2%	16,1%	6,5%	6,5%	32,3%
	3-5 times	Count	2	15	2	0	19
		% of Total	6,5%	48,4%	6,5%	,0%	61,3%
	6 or more times	Count	0	2	0	0	2
		% of Total	,0%	6,5%	,0%	,0%	6,5%
Total		Count	3	22	4	2	31
		% of Total	9,7%	71,0%	12,9%	6,5%	100,0%

Graph 4 presents the correlation between the consumption of carbonated drinks and dental erosions on the central incisors which for R=-0,28 and p>0,05 is a medium strong negative insignificant correlation. Namely the increase in the use of carbonated drinks is followed by a decrease in the level of erosive changes.



Graph 4. Correlation between the consumption of carbonated drinks and dental erosions on the central incisors

The data which applies to the correlation between the dental erosions according to surface in the central incisors and the consumption of carbonated drinks presented in 10 (32,3%) patients which used carbonated drinks with or without sugar 2 times or less, weekly, 3 (9,7%) patients had dental erosions on their buccal / labial surface; 3 (9,7%) patients had dental erosions on their lingual / palatal dental surface and 4 (12,9%) patients had dental erosions on their occlusal / incisal surface.

From 19 (61,3%) patients which used carbonated drinks with or without sugar 3-5 times a week, 6 (19,4%) patients had dental erosions on their buccal / labial dental surface; 10 (32,3%) patients had dental erosions on the lingual / palatal dental surface and 3 (9,7%) patients had dental erosions on their occlusal / incisal dental surface.

From 2 (6,5%) patients which used carbonated drinks with or without sugar 6 or more times in one week, 1 (3,2%) patient had dental erosions on their buccal / labial dental surface and 1 (3,2%) patient had dental erosions on their lingual / palatal dental surface. (table 5)

In the presented distribution of data which applies to the consumption of carbonated drinks and dental erosions according to dental surfaces in the central incisors for Fisher*s Exact test=3,21and p>0,05(p=0,59/0,580-0,605) there is no significant difference.

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Table 5 Carbonated drinks & Dental surfaces

			Surfaces			Total
	During the week		Buccal/ Labial	Lingual / Palatal	Occlusal / Incisal	
Carbonat-ed drinks	2 times / less	Count	3	3	4	10
		% of Total	9,7%	9,7%	12,9%	32,3%
	3-5 times a week	Count	6	10	3	19
		% of Total	19,4%	32,3%	9,7%	61,3%
	6 or more times	Count	1	1	0	2
		% of Total	3,2%	3,2%	,0%	6,5%
Total		Count	10	14	7	31
		% of Total	32,3%	45,2%	22,6%	100,0%

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The data which applies to the consumption of fruit drinks and diagnosed dental erosions in central incisors in 12 (38,7%) patients which consumed fruit drinks with or without sugar rarely or none during the day showed that 1 (3,2%) patient had superficial loss of dental enamel; 8 (25,8%) patients had loss of dental enamel and exposed dentin in less than one third of the surface of the tooth, 2 (6,5%) patients had loss of enamel with exposed dentin and loss of more than one third of the surface of the tooth without exposure of the pulp and 1 (3,2%) patient had total loss of dental enamel with an exposed pulp and secondary dentin.

From 10 (32,3%) patients which consumed fruit drinks with or without sugar once during the day, 8(25,8%) patients had loss of dental enamel, exposed dentin on less than one third of the surface of the tooth, 1 (3,2%) patient ha loss of dental enamel, exposed dentin and loss of more than one third of the surface of the tooth without an exposed pulp, and 1 (3,2%) patient had total loss of dental enamel, an exposed pulp or secondary dentin.

From 9 (29,0%) patients which consumed fruit drinks with or without sugar multiple times during the day, 2 (6,5%) patients had superficial loss of dental enamel, 6 (19,4%) patients had loss of dental enamel, and the dentin was exposed in less than one third of the surface of the

tooth, and 1 (3,2%) patient had loss of dental enamel with an exposed dentin and loss of more than one third of the surface of the tooth without exposure of the pulp. (table 6)

In the presented distribution of data which applies to the consumption of fruit drinks and dental erosions diagnosed on the central incisors for the Fisher*s Exact test=3,73and p>0,05(p=0,85/0,841-0,859) there is significant difference.

Table 6. Consumption of fruit drinks / Dental erosions / Central incisors

			Central incisors				Total
	During the day		Skor 1	Skor 2	Skor 3	Skor4	
Fruit drinks	Rarely or none	Count	1	8	2	1	12
		% of Total	3,2%	25,8%	6,5%	3,2%	38,7%
	Once during the day	Count	0	8	1	1	10
		% of Total	,0%	25,8%	3,2%	3,2%	32,3%
	Multi times	Count	2	6	1	0	9
		% of Total	6,5%	19,4%	3,2%	,0%	29,0%
Total		Count	3	22	4	2	31
		% of Total	9,7%	71,0%	12,9%	6,5%	100,0%

Graph 5 shows the correlation between the use of fruit drinks and dental erosions on the central incisors, where for R=-0,20 and p>0,05 we can conclude that there is a weak negative insignificant correlation. Namely, the increase in the use of fruit drinks is followed with a decrease in the level of erosive changes.

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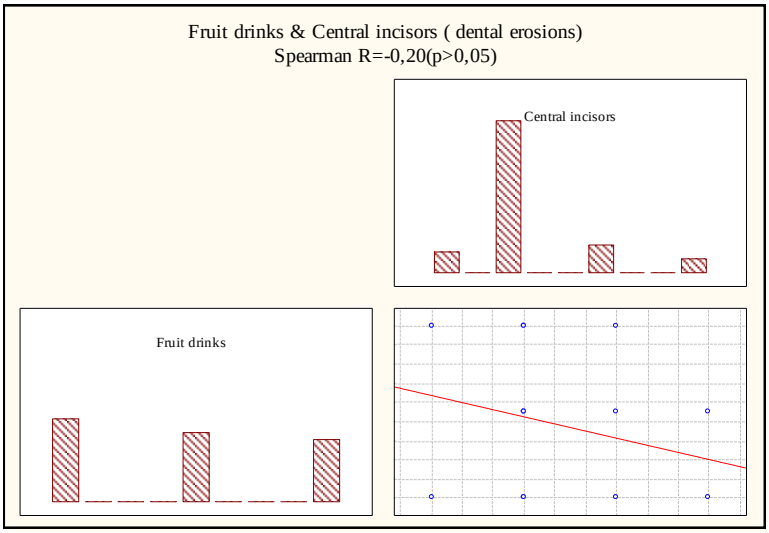

Graph 5. Correlation between the consumption of fruit drinks and dental erosions on the central incisors

Consumption of carbonated drinks and the correlation with dental erosions on the first permanent molar, show that from 10 (32,3%) patients which consumed carbonated drinks with or without sugar 2 times a week or less, 5 (16,1%) patients had loss of dental enamel with exposed dentin on less than one third of the tooth surface and 5 (16,1%) patients had total loss of dental enamel with an exposed pulp. From 19 (61,3%) patients which used carbonated drinks with or without sugar 3-5 times a week, 2 (6,5%) patients had superficial loss of dental enamel, 16 (51,6%) patients had loss of dental enamel with an exposed dentin on less than one third of the tooth surface and 1 (1,9%) patient had loss of dental enamel with an exposed dentin and loss of more than one third of the surface of the tooth without an exposed pulp. In 2 (6,5%) patients which consumed carbonated drinks with or without sugar 6 or more times during the week we diagnosed loss of dental enamel and exposed dentil on less than one third of the surface of the tooth. (Table 7)

In the presented distribution of data which take into consideration the consumption of carbonated drinks and dental erosions diagnosed on the first permanent molar, for the Fisher's Exact test=13,5 and $p<0,05$ ($p=0,01/0,010-0,016$) there is a significant difference. In the examined correlation between the consumption of carbonated drinks and dental erosions on the first permanent molar for R=0,00 there is no correlation.

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Table 7 Carbonated drinks / Dental erosions & First permanent molar

	During the week		ΠΤΜ				Total
			Score 1	Score 2	Score 3	Score 4	
Carbonat-ed drinks	2 times / less	Count	0	5	0	5	10
		% of Total	,0%	16,1%	,0%	16,1%	32,3%
	3-5 times	Count	2	16	1	0	19
		% of Total	6,5%	51,6%	3,2%	,0%	61,3%
	6 / more times	Count	0	2	0	0	2
		% of Total	,0%	6,5%	,0%	,0%	6,5%
Total		Count	2	23	1	5	31
		% of Total	6,5%	74,2%	3,2%	16,1%	100,0%

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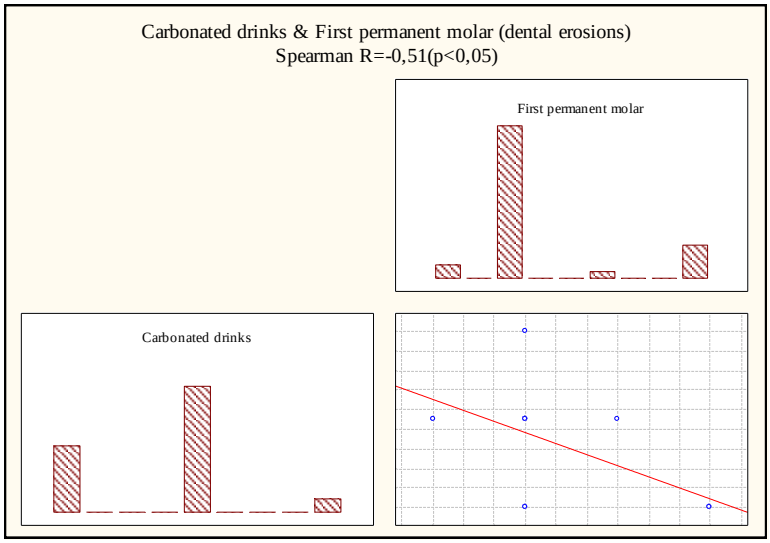
In the examined correlation between the consumption of carbonated drinks and dental erosions on the first permanent molar for R=-0,51 and p<0,05 there is a medium strong negative significant correlation. Namely, the increase in the consumption of carbonated drunks is followed with a decrease in the level of erosive changes (graph 6).



Graph 6. Carbonated drinks / Dental erosions & First permanent molar

The data which applies to the consumption of fruit drinks and the association with dental erosions on the first permanent molar show that from 12 (38,7%) patients which consumed fruits drinks with or without sugar rarely or none, 8 (25,8%) patients had loss of dental enamel, exposed dentin on less than one third of the surface of the tooth, in 1 (1,9%) patient there is loss of dental enamel, with exposed dentin and loss of more than one third of the surface of the tooth without an exposed pulp and 3(9,7%) patients had total loss of dental enamel with an exposed pulp.

From 10 (32,3%) patients which consumed fruits drinks with or without sugar once or multiple times during the day, 8 (25,8%) patients had loss of dental enamel, exposed dentin on less than one third of the surface of the tooth and 2 (6,5%) patients had total loss of dental enamel with an exposed pulp.

From 9 (29,0%) patients which consumed fruits drinks with or without sugar multiple times during the day, 2 (6,5%) patients had only superficial loss of dental enamel and 7 (22,6%) patients had loss of dental enamel with an exposed dentin on less than one third of the surface of the tooth (table 8).

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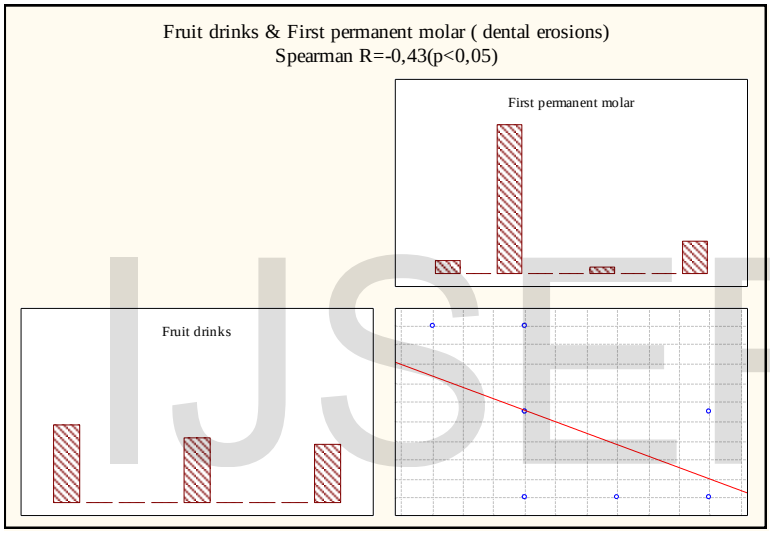
In the presented distribution of data which takes into consideration the consumption of fruits drinks and dental erosions diagnosed on the first permanent molar for the Fisher*s Exact test=6,96 and p>0,05(p=0,23/0,223-0,245) there is no significant difference.

Table 8 Fruit drinks / Dental erosions / First permanent molar

			First permanent molar				Total
	During the day		Score 1	Score 2	Score 3	Score 4	
Fruit Drinks	Rarely or none	Count	0	8	1	3	12
		% of Total	,0%	25,8%	3,2%	9,7%	38,7%
	Once during the day	Count	0	8	0	2	10
		% of Total	,0%	25,8%	,0%	6,5%	32,3%
	Multiple times a day	Count	2	7	0	0	9
		% of Total	6,5%	22,6%	,0%	,0%	29,0%

Total	Count	2	23	1	5	31
	% of Total	6,5%	74,2%	3,2%	16,1%	100,0 %

Graph 6 displays the correlation between the use of fruits drinks and dental erosions on the first permanent molar. For R=-0,43 and p<0,05 there is a medium strong negative significant correlation. Namely, the increase in the use of fruit drinks is followed with a decrease in the level of erosive changes.



Graph 6 Fruit drinks / Dental erosions / First permanent molar

Discussion

Throughout life, the teeth are exposed to a number of harmful effects, which more or less contribute to the occurrence of wearing and loss of morphological features. The morphological changes and the extent of the defects can significantly vary depending on the predominant etiological factor, the type of dentition and time of usage. [7,8]

The loss of the hard tissues of the teeth from a non carious etiology is a multi factorial irreversible process in which the morphological changes and the level of defects can significantly differ in correlation to the dominant etiological factor [9].

The monitoring of the distribution of dental erosions diagnosed in the central incisors and the first permanent molar, which was accomplished with our study, in correlation to the gender of the examinees, showed, that there is no significant difference between the two examined parameters, when we take into consideration the erosions of the teeth or even when we take into consideration their depictment according to the surfaces of the teeth ($p>0,05$), which is in correlation with the results from Al-Zarea [10].

The analysis of the results of logistic regression made by Al-Zarea[10] et al indicated that there are no differences in prevalence of dental erosion among the genders, which explains it with the same or similar form of risk factors acting on the tested samples. But in other studies a higher prevalence was noted in male in comparison with female respondents.[11]

Our results are in accordance with the tests that Al-Dlaigan[12] et al. conducted on children and adolescents and found that 48% of children had small erosion, 51% had moderate erosion and 1% had serious erosion.

With the tests made on 210 patients who had their medical examination in a dental hospital in Punjab, Shahzad[13] indicated existence of surface enamel loss in 45,7% of the respondents, 43,3% of them had changes in dentin in permanent incisors which is somewhat in accordance with our results. What is worth to mention is the high rate of teeth sensitivity in patients (65.2%), which was not object of our research.

The results which we got from our study that represent the patients with dental erosions on the central incisors and the use of carbonated drinks, showed a prevalence in the patients that consumed carbonated drinks 3-5 times a week from which 48,4% were with an intensity of erosion with a score 2.

The correlation between the use of carbonated drinks and dental erosion on the central incisors were with a medium strong negative insignificant correlation $p >0,05$, where the increase in the consumption of carbonated drinks is followed with a decrease in the level of erosive changes.

The data from the examination related to the correlation of the dental erosion according to tooth surfaces and consumption of carbonated drinks in the central incisors show that the greatest number of patients 19 (61,3%) consumed carbonated drinks 3-5 times during the week from

which in 10 (32,3%) patients the changes were on the lingual and palatal surfaces, but still they did not have significant statistical differences p>0,05.

The results of the correlation of the consumption of fruits drinks during the day and the presence of dental erosions, show that the greatest number of examinees 12 (38,7%) consumed fruits drinks rarely or none, and the greatest part of them 8 (25,8%) were with damage to the teeth from erosions with a score 2, which was identical to the examinees that consumed drinks only once during the day, but, statistically the data did not have a significant difference p>0,05.

The consumption of carbonated drinks in patients with dental erosions on the first permanent molar which consumed carbonated drinks 3-5 times during the week, was seen in 19 (61.3%) patients from which in 16 (51,6%) patients the intensity of the erosions were with a score 2.

In the presented distribution of data which applies to the consumption of carbonated drinks and dental erosions diagnosed on the first permanent molar, there is a significant difference for p<0,05. In the examined correlation between the use of carbonated drinks and dental erosions on the first permanent molar for R=0,00 there is no statistical correlation.

In the examined correlation between the consumption of carbonated drinks and dental erosions on the first permanent molar there is a medium strong negative significant correlation p<0,05, and the increase in the consumption of carbonated drinks is followed with a decrease in the level of erosive changes.

The data which applies to the consumption of fruits drinks and the correlation to dental erosion in the first permanent molar, show that the greatest part of the examinees 12 (38,7%), consumed fruit drinks rarely or none and the greatest part of them had second degree erosions, 8(25,8%).

In the presented distribution of data which applies to the consumption of fruit drinks and dental erosions diagnosed on the first permanent molar there is no significant difference (p>0,05).

The correlation between the consumption of fruits drinks and dental erosions on the first permanent molar was with a medium strong negative significant correlation p<0,05, where the increase in the consumption of fruit drinks was followed by a decrease in the level of erosive changes.

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Dugmore and col. determined that the consumption of acidic foods, fruit drinks and carbonated drinks are in a direct correlation with the onset of erosive changes, which was found in our study as well.

Clinical studies show that soft drinks, especially carbonated drinks, whose consumption among adolescents is globally increased, are perhaps associated with dental erosion, probably because of their low pH value which can cause erosion and dental caries.[3,5] However, In vitro studies showed that fruit juices can be potentially erosive because of their high content of titratable acid.[16]

However, one thing is certain, which Jensdottir[15] et al , that the erosive potential of food and drink is a measure of its capacity to demineralise dental substances. Generally, the erosion of the enamel may happen only if the pH value is below 5.5.

Given the different aspects, it seems that the difference between condition and pathology depends on the concepts of health and disease. However, dental erosion is generally best described as a condition caused by the action of acid from non-pathogenic background.[3, 7, 9, 11]

What was presented so far indicates a need for carrying a clinical study that will synthesize the etiological factors, the most appropriate clinical diagnostics and selection of the most adequate index for diagnosis, and the results could be used for preparing protocols for prevention.

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