

Correlation Between Erosion and Using of Fizzy Drink

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Received: July 04, 2021

Published: August 10, 2021

Abstract

Dental erosion is jointed with the dental structure melting by using of acidity of foods, fizzy drink without micro-organism presence. The erosion process comes by several external and internal factors. Some of external factors are consuming of fizzy drink, acetous foodstuff, lemonade, wines etc.

The aim of study: is to investigate the correlation that exists between the using of fizzy drink and erosion of teeth region of the dental structure.

Material and methodic: in our study were involved about 187 patients (subjects) of the age group 18–32-year-old, who have filled a questionnaire during the 2019 October, – 2020 March period. The questionnaire contents, as well as the using of fizzy drink by above mentioned subjects, and presence or not of the erosion at these subjects. According these interpretations was made the math – statistical data processing, in order to determine the correlation that exists between using of fizzy drink and erosion of teeth region of the dental structure.

Results and discussions: our study results shown that about 73,8%) of our subjects were females, and 26,2% were males. By above 187 subjects, about 139 or (74,3%) have used fizzy drink and by these subjects about 35,8%, have shown erosion, meantime (64,2%) have not shown erosion of teeth region of the dental structure. We have found an important statistical correlation between using of fizzy drink and presence of erosion with ($p=0.012$) value, and in the same time was not confirmed any important statistical correlation between gender (s) and using of fizzy drink, as well as between age group (s) and region (s) of carried teeth with ($p=0.198$) value of erosion. Meanwhile we have found an important correlation between using of fizzy drink and carried teeth region with ($p=0.352$) value of our study subjects.

Conclusion: according to our study we have concluded that exist a significant correlation using of fizzy drink and erosion with ($p=0.012$) value of the total subject's number of our study.

Keywords: erosion of teeth, fizza drinking, acetous foodstuff, math-statistical correlation.

Introduction

Erosion is the destruction of the hard tissue of the tooth by chemical factors. Progressive consumption of the dental structure, as result of the chemical processes actions, undefended of the micro-organisms, bacterial flora in oral cavity [1]. Chemical consumption happens when the teeth are exposed for a long time under the acidity of the dissolution. Two are the causing of the erosion: external and internal factors, which are etiological factors in charge for dental system. Fizzy drink consumption, conserved drink consumption, different wines consumption, acetous food consumption are main external factors for erosion phenomena, while the chronically gastrointestinal disorders, continuity of unappetizing of the individual, bulimia, regurgitimi, and vomits are interior factors for erosion of dental system. Usually, the erosion potency of the acidic fizzy will serve as jumping of place for demineraliza-

tion and losing of the dental structure, and for that reasons, the dental erosion appearance should appreciate as well by using of the medicaments with PH acidity (like C vitamin, aspirin etc.,) which are continually in contact with tooth surface.

In dental practice the chemical and bacteriological factors are determined elements for generation of erosion.

The foods and acidity of the fizzy drinks give contact with superficial glaze of the tooth diffusing into the its layer, creating for chemical agent an opportunity to intervene in reaction with mineral content of the layer tooth like as hydroxyl apatite of the glaze. The erosion capability of the acidity of fizzy drink, do not totally depended by its PH, but it is affected as well by two other factors: 1] dissobility of the content acid in its buffered capability and, 2] the capability of decay to the of the Calcium (Ca), as well as, the new affinity to create free ions. As higher the buffered capability of the fizzy drinks, so longer

need by saliva for neutralization of the acidity [2]. Mainly the biological factors have effects over the saliva, the tooth content and its anatomic structure, which are followed by biological protection capability of the saliva against corrosion including by such phenomena's: a] dissolution and removal of corrosive substances from mouth, b] neutralization (buffering) of acid's, because saliva minimize corrosion through neutralization of acid's favoring re-mineralization by securing the Ca+2; PO4-3 ions, c] providing the necessary Ca, P, F for re-mineralization. In this case, saliva over the tooth surface established a cuticle that has protection effect against de-mineralization action of acid, damaging of this cuticle from fizzy – acids of drinks and destroying its protection capability, creating more opportunity to speed up the corrosion process. Generally, as lower the buffering capability of saliva, so higher is erosion process over the dental system [3]. Consumption of conservation fruits drinks, fizzy drinks, vegetarian foods produce erosion effects over the teeth, which bring dentinal changes, like as aperture of dentinal tubules, which are more sensible against the external irritations creating strong pains.

According the hydrodynamic theory, an irritation by acid applied over the tooth surface, discovering dentinal tubules, which are associative with moving of fluids among their, changing the pressure at mechanical receptors of dentinal alpha-beta or alpha –delta fibers. This change of moving of fluids is perception as a sharp pain at the patients. The dentinal hypersensitivity is a primary phenomenon of the teeth erosion.

The erosion of the tooth consumption is considered as a pathological phenomenon, when is shown at an unacceptable level for its consumption. Evaluation, if the teeth consumption is pathological phenomena or not, was depended by same factors: by the consumption scale; by the patient's demand for the dentinal over sensibility; by the age of the patient. Clinically was shown, not only the enamel exposure, but the dentine also, which is associative with an over stress sensibility as were shown in our patients study photos [1,2].

The erosive consumption of teeth at the dental system, usually is distributed and affected all ages of the patients, and according a study carried out by Switzerland researches has shown: 7,7% of the examined patients have erosion at the vestibular surface of the tooth, 13,2% of the examined patients have had at least one tooth with erosion exposed until dentine, according the age groups respectively. According our study carried out at the 187 examined patients, about 74,3% have used fizzy drinks, and from those patients, only 35,8% were affected by erosion in different surfaces of the teeth. The main and frequently consequences of the erosion based in our study were: over sensibility of the enamel, over sensibility of the dentine; damages of the tooth configuration and structural damage of the neck tooth [4].

The main objectives of our study were: to study the distribution of the subjects involved in study, according their age and gender; to study the distribution of the subjects involved in study, according the corrosion presence, the teeth region affected, as well as using of the fizzy drinks; to determine if have any correlation (according statistical accompaniment) between gender and using of the fizzy drinks, as well as the age groups and teeth region affected, according using of the fizzy drinks with those of the teeth region affected. The data base collection was realized by structural questionnaires which were filled by planned subjects of patients in study in the moment those were

ready for interview.

Material and Method

In our study were involved about 187 subjects of the age groups, 18-32 years old, filling a questionnaire for October 2019 - March 2020 period. In the questionnaires were involved several as below questions: 1] content the demographic data for gender, and age group; 2] using of the fizzy drinks; 3] erosion presence; 4] the teeth regions affected by erosion for different patients age and all the data base collected by questionnaires, were statistically computerized, in order to find and to confirm correlation that exist between users of the fizzy drinks, and the presence of the erosion in dental system [4,5].

Results

For October 2019 - March 2020 period was investigated 187 subjects about 18-32 years old and by results of the table 1 and the graphic 1, shown about 95,2 % of the interviewed were age group 18-23 year, 4,3% were group age 24-32 years and one subject has refused to response about the age.

By results of our study for the subjects genders included in our study are in table 2 and graphic 2, shown about 73,8 % of the interviewed were female, and about 26,2% were male.



The fizzy drinks used by our subjects are shown in table 3 and graphic 3 and based at these results were investigate about 74,3 % of the interviewed have reported using of the fizzy drinks, and about 25,7 % do not used fizzy drinks.

By oral examination of the subjects involved in our study was shown the presence of the erosion at the vestibular side of the teeth and according the results of table 4 and graphic 4 was shown about 74,3 % of the interviewed have reported using of

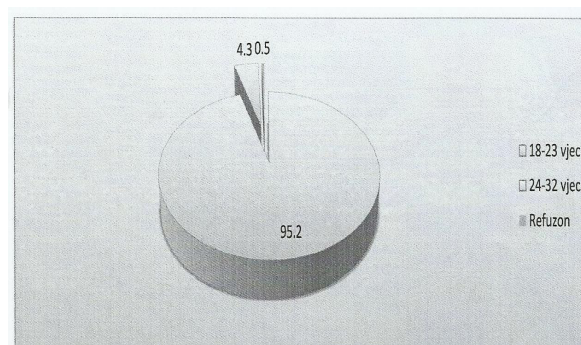


Figura 1 tregon shperndarjete subjekteve te perfshire ne studim ne lidhje me moshen

Tabela 1 tregon shperndarjene subjekteve te perfshire ne studim ne lidhje me moshen.

Mosha e te intervistuarve	Numri	Perqindja
18-23	178	95.2
24-32	8	4.3
Refuzon	1	0.5

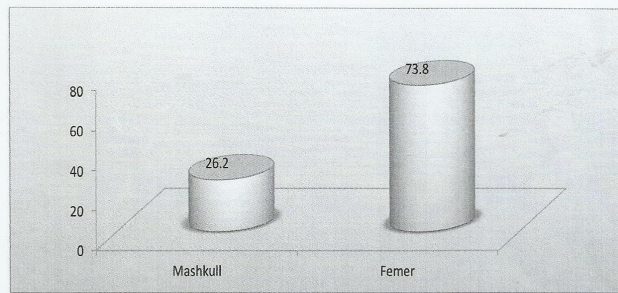


Figura 2 tregon shperndarjen e subjekteve te perfshire ne studim ne lidhje me gjinine.

Gjinia e te intervistuarve	Numri	Perqindja
Femer	138	73.8
Mashkull	49	26.2

Perdorimi i pijeve te gazuara	Numri	Perqindja
Perdor pije te gazuara	139	74.3
Nuk perdor pije te gazuara	48	25.7

Prezenca e erozionit	Numri	Perqindja
Prezence erozioni	67	35.8
Mungese erozioni	120	64.2

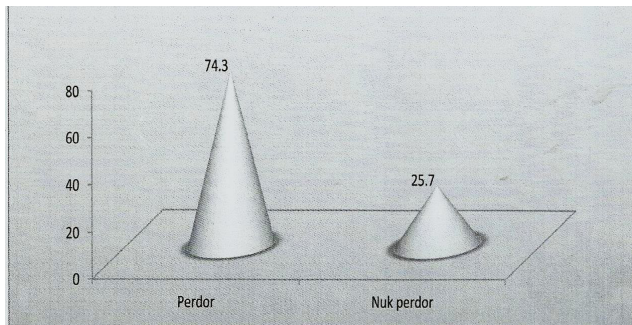


Figura 4 tregon shperndarjen e perdorimit te pijeve te gazuara tek subjektet e perfshire ne studim.

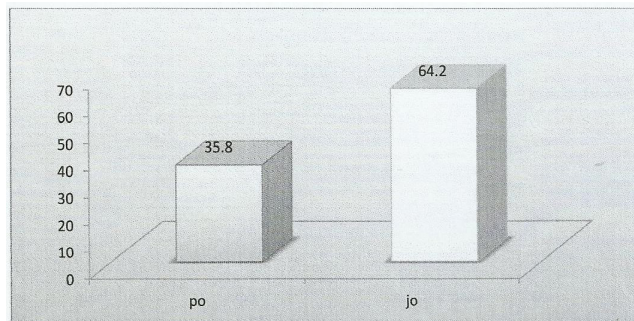


Figura 3 tregon shperndarjen e subjekteve te perfshire ne studim ne lidhje me prezencen e erozionit.

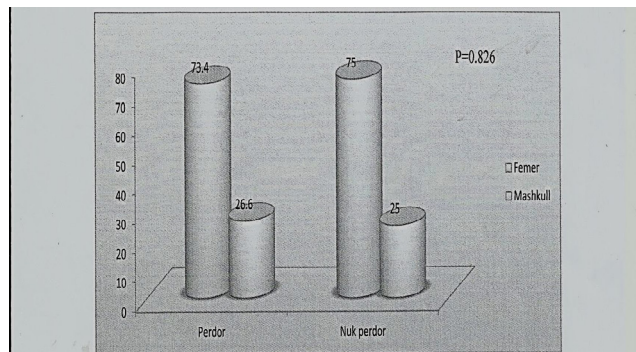


Tabela 6 tregon shperndarjen e subjekteve te perfshire ne studim ne lidhje me perdorimin e pijeve te gazuara

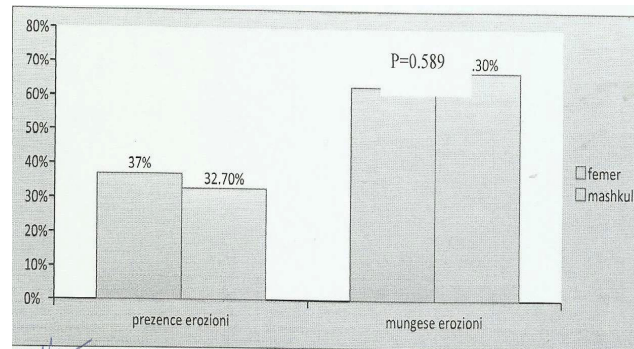


Tabela e mesiperme tregon shperndarjen e gjinise ne lidhje me prezencen e erozionit ne subjektet e perfshire ne studim.

the fizzy drinks, and about 35,8% or 67 subjects have the erosion presence at their teeth, while 64,2% or 120 of the cases do not shown the erosion presence [5,6].

The fizzy drinks were used by both study subjects (genders, male and female) and according the results of table 5 and graphic 5 shown about 73,4 % of the reported patients were female, and about 26,6% of the cases are male, whom used

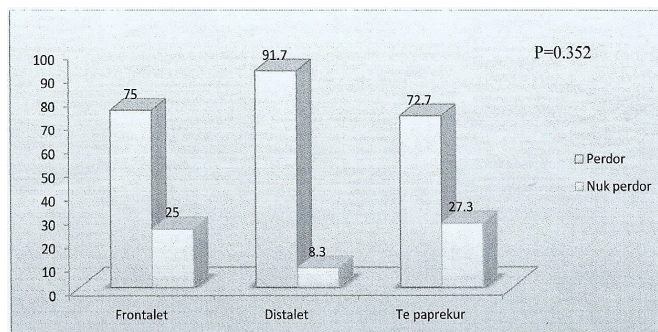


Figura 7 tregon shperndarjen e perdorimit te pijeve te gazuara ne lidhje me regionin e dhembeve te prekur

fizzy drinks, with prevalence about P=0,826.

The erosion presence was shown in different % according the gender of the subjects involved in study, and based at results of table 6 and graphic 6 shown that do not exist any important statistical correlation, because the prevalence is very lower (p=0,589).

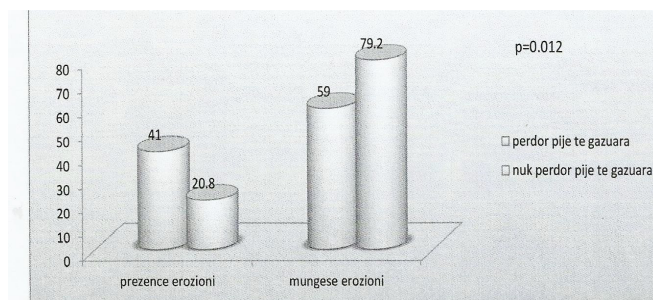


Figura 9 tregon shperndarjen e perdorimit te pijeve te gazuara ne lidhje me prezencen e erozionit

Variablat	Perdor pije te gazuar	Nuk perdor pije te gazuara	Vlera p-se
Femer	102(73.4)*	36(75.0)	P=0.826£
Mashkull	37(26.6)	12(25.0)	

£ Vlera e p-se sipas testit hi-katror
*Numrat absolute dhe perqindjet ne kllapa

Variablat	Prezence erozioni	Mungese erozioni	Vlera e p-se
Femer	51(37.0%)*	87(63.0%)	p=0.589£
Mashkull	16(32.7%)	33(67.3%)	

*Vlerat absolute dhe perqindjet ne kllapa

£Vlera e p-se sipas testit hi-katror

Tabela 7 tregon shperndarjen e perdorimit te pijeve te gazuara ne lidhje me regionin e dhembeve te prekur

Variablat	Frontalet	Distalet	Te paprekur	Vlera e p-se
Perdor pije te gazuara	24(75.0)*	11(91.7)	104(72.7)	P=0.352£
Nuk perdor pije te gazuara	8(25.0)	1(8.3)	39(27.3)	

£ Vlera e p-se sipas testit hi-katror

*Numrat absolute dhe perqindjet ne kllapa

Variablat	Prezence erozioni	Mungese erozioni	Vlera e p-se
Perdor pije te gazuara	57(41.0)*	82(59.0)	P=0.012£
Nuk perdor pije te gazuara	10(20.8)	38(79.2)	

*vlerat absolute dhe perqindjet ne kllapa

£ Vlera e p-se sipas testit Hi-katror

By using of the fizzy drinks were palpitated by erosion the frontal and distal teeth and according table 7 and graphic 7, was not reported any statistical accompaniment between using of the fizzy drink at the palpitated regions, because the prevalence is very lower (p=0,352).

As result of using of the fizzy drinks by our subjects' study, the erosion phenomena according table 9 and graphic 9, shown an important correlation between using of fizzy drinks and teeth erosion, where have a standard deviation with prevalence value about p=0,012.

Discussion

We have examined about 187 subjects, where about 138 patients or (73,8%) female and about 49 patients or (26,2%) were male gender, and according data collection in our study dominate the female gender in a rate 3:1.

The interviewers were at the age group 18-32 years old and based at the study results, about 176 patients or (95,2%) of the subjects were at the 18-23 group age, 8 patients or (4,3%) of the subjects were at the 24-32 years old, and one patient has not response to his age.

Also, the study shown about 67 subjects or (35,8%) have reported for erosion presence, while 120 of subjects have not the teeth erosion.

From 67 subjects with erosion about 57 patients or (41%) used fizzy drinks, and about 10 patients or (20,8%) of the subjects do not used fizzy drinks, but shown the erosion presence.

The reasons of erosion in this contingent (10) interviewed subjects, according our opinion was shown using of dental brushes with hard solidity, as well as using of more abrasive toothpaste [7].

Using of fizzy drinks and conservation foods by new generation, was more spread in our country, which is indicated by study, because from 187 subjects, about 139 (74,3%) used frequently fizzy drinks and about 48 of subjects or (25,7%) do not used this kind of drinking.

The study results also shown about 139 subjects, which have used frequently fizzy drinks, but from those patients, about 57 of subjects or (41%) have had the erosion presence, and about 82 of subjects or (59%) have not erosion presence.

For some of cases, when have had only the enamel erosion, was made a massage procedure by fluoride gel, while, when was corroded the dentine, was made the tooth filling by composite procedure, as well as was recommended do not using of frequently fizzy drinks, especially for age groups more affected.

Conclusion

The results of our study shown that the great part of subjects involved in study were female (73,8%), as well as by study was noticed that a great part of subjects was age group of 18 – 23 years.

The study noticed that a great part of subjects has the erosion missing according 64,2%, versus 35,8%, whom have reported the erosion presence, where about 74,3% of study subjects, have used the fizzy drinks.

The study shown also, from 139 of subjects, which have used the fizzy drinks, at 41% of subjects was shown the erosion presence and at about 59% of subjects was not shown the erosion presence.

The study confirmed an important statistical correlation between using of fizzy drinks and the corrosion presence ($p=0,012$), but there was not confirmed any important correlation between gender and using of fizzy drinks ($p=0,826$), as well as the age groups and the region of affected teeth by using of fizzy drink ($p= 0,352$).

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