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УДК: 616.314-002.4:616.329-009.12-550.42

ОЦЕНКА РАСПРОСТРАНЕННОСТИ И ИНТЕНСИВНОСТИ КАРИЕСА У ПАЦИЕНТОВ С ГАСТРОЭЗОФАГЕАЛЬНОЙ РЕФЛЮКСНОЙ БОЛЕЗНЬЮ.

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ASSESSMENT OF THE PREVALENCE AND SEVERITY OF CARIES IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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ГАСТРОЭЗОФАГЕАЛ РЕФЛЮКС КАСАЛЛИГИ БОР БЕМОРЛАРДА КАРИЕС ТАРКАЛГАНЛИГИ ВА ЖАДАЛЛИГИНИ БАХОЛАШ

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АННОТАЦИЯ

Исследование посвящено изучению особенностей клинического течения кариеса у больных с различными стадиями гастроэзофагеальной рефлюксной болезни. Результаты комплексного клинического обследования подтверждаютотягощающее влияние ГЭРБ на течение кариеса зубов. Причем по мере прогрессирования гастроэзофагеальной рефлюксной болезни и перехода ее от эндоскопически “негативной” в катаральную и метапластическую стадии усугубляется тяжесть течения и интенсивность кариозного поражения.

Ключевые слова: кариес зубов, гастроэзофагальная рефлюксная болезнь, интенсивность кариеса зубов, структура индекса КПУ.

ABSTRACT

The study is devoted to the study of the features of the clinical course of care in patients with various stages of gastroesophageal reflux disease. The results of a comprehensive clinical examination confirm the aggravating effect of GERD on the course of dental caries. Moreover, with the progression of gastroesophageal reflux disease and its transition from endoscopically "negative" to the catarrhal and metaplastic stages, the severity of the course and the intensity of carious lesions are aggravated.

Keywords: dental caries, gastroesophageal reflux disease, the intensity of dental caries, the structure of the KPU index.

АННОТАЦИЯ

Тадкикот гастроэзофагеал рефлюкс касаллигининг турли боскичлари бор беморларда кариес клиник кечишининг хусусиятларини урганишга бағишланган. Кенг камровли клиник текширув натижалари ГЭРК нинг кариес касаллигини кечишини оғирлаштириши тасдиқланган. Бундан ташқари гастроэзофагеал рефлюкс касаллигининг жадаллашиши ва эндоскопик “манфий” “дан катарал ва матапластик боскичга утиши кариес жараенининг интенсивлигини ва оғирлик даражасини кучайтиради.

Калит сўзлар: тиш кариеси, гастроэзофагеал рефлюкс касаллиги, кариес касаллигининг интенсивлиги, КПУ индекси.

SUMMARY

The aim of the research was: To study the incidence of dental caries in patients with gastroesophageal reflux disease in terms of prevalence and intensity.

When distributing patients with GERD, the clinical and endoscopic classification of GERD, adopted at the IX European Gastroenterological Week in Amsterdam (2001), was taken into account.

A high activity of the course of caries was established in patients with GERD: a decompensated form of caries was found in $64.60 \pm 2.38\%$ of patients versus the occurrence in $26.67 \pm 3.62\%$ ($P \leq 0.05$) of patients in the control group; in the absence of statistical differences in the frequency of the sun compensated flow, which was, respectively, $30.94 \pm 2.30\%$ versus $40.00 \pm 4.00\%$ ($P \leq 0.05$); against the background of a significant decrease in the frequency of the compensated course - $4.46 \pm 1.03\%$ versus $33.33 \pm 3.85\%$ ($P \leq 0.05$) in the control group. A detailed analysis made it possible to establish a statistically significant increase in the prevalence of decompensated and a decrease in the prevalence of a compensated course with an increase in the severity of GERD.

Examination of patients with different variants of the course of GERD showed a high (according to WHO criteria) intensity of dental caries. At the same time, the structure of the KPU index is dominated by carious - element "K" and removed - element "U" teeth. A statistically significant increase in the prevalence of decompensated and a decrease in the prevalence of compensated caries with an increase in the severity of GERD was established.

Based on the study of the structure of the "K" element, a relationship was established between the severity of carious lesions and the clinical course of GERD: with an increase in the severity of clinical manifestations, the absolute values and specific gravity in the structure of the "K" element of such nosological units as initial and stopped caries against the background of an increase in absolute values and specific weights of dentine caries and cement caries

The number of patients with gastroesophageal reflux disease (GERD) is steadily growing from year to year, and the number of patients with dental manifestations of GERD is also increasing [3,6].

Dental caries is the most common disease, occupies the first place in the structure of nosology of general morbidity [1,2,4].

As you know, the state of the oral cavity organs serves as an informative indicator that dynamically reflects changes in the state of the human body that reacts to their effects. [8.9]

In connection with the above, the purpose of these studies was: to study the incidence of dental caries in patients with gastroesophageal reflux disease in terms of prevalence and intensity; assessment of the need for pathogenetic therapy of dental caries in this contingent.

Materials and methods:

When distributing patients with GERD, the clinical and endoscopic classification of GERD was taken into account, adopted at the IX European Gastroenterological Week in Amsterdam (2001), within which the following were distinguished:

- non-erosive form of GERD (NFGERD), which occurs in about 60% of cases, it includes GERD without signs of esophagitis and catarrhal reflux esophagitis;

- erosive and ulcerative form (EFGERD - 34–37% of cases), including its complications: ulcer and structure of the oesophagus;

- Barrett's oesophagus (PB) (8–20% of cases) - metaplasia of stratified squamous epithelium in the distal oesophagus into a cylindrical intestinal type, as a consequence of GERD. [5,7,10].

The number of examined and their distribution by sex and age is presented in Table 1.

Table 1

Age and sex composition of patients with gastroesophageal reflux disease

Age and year	Control, n=40		With NE GRB n=66		AGED n=74		ROGER n=78		PB n=73		Total n=391		Total
	m	f	m	f	m	F	m	f	m	f	m	F	
18-20	5	3	6	4	7	4	6	4	5	3	24	15	39
21-30	6	4	5	3	8	5	9	7	12	10	34	25	59
31-40	6	4	10	6	12	7	11	9	10	8	43	30	73
41-50	4	3	12	7	12	8	14	8	9	7	47	30	77
51-60	3	2	5	8	6	5	6	4	5	4	22	21	43
Bcero	24	16	38	28	45	29	46	32	41	32	170	121	291

During the examinations, the following was taken into account: the prevalence of dental caries - as the ratio of the number of persons with at least one of the signs of the manifestation of dental caries (cariou, filled or extracted teeth) to the total number of examined persons, expressed as a percentage.

To assess the intensity of caries in permanent teeth, the following indices were used: KPU index (s) - the sum of carious ("K"), filled ("P") and removed ("U") teeth in one patient.

Based on the nature of the intensity of the course of the disease, three forms of caries activity were distinguished:

1. compensated (1 degree), when caries is in the spot stage for a long period, and does not form a depression, or the formed carious cavity does not progress for a long time. This form can also be called chronic.

2. subcompensated (grade 2), that is, the rate of development of the disease corresponds to the average indicators for a particular age group. In other words, the classic form of caries.

3. decompensated (grade 3), characterized by rapid progressivity and generalization of the lesion. Defined as an acute form of the disease.

For qualitative indicators, the number and percentage of patients were calculated for each value of the indicator. For quantitative indicators, the mean, standard deviation, and standard error of the mean were calculated. Comparison of the means for quantitative indicators was carried out using the Student's t-test, then the value (P) was found - the probability of error. In our study, the results were considered reliable at $P \leq 0.05$.

Results and discussion

As a result of mass examinations of patients with the different clinical courses of GERD and persons of the control group, it was established that the prevalence of caries among the adult population is 100.0%. As a result of the analysis of the KPU index, it was found that the intensity of caries in the control group was 9.58 ± 0.47 teeth affected by caries per one examined, while the intensity of caries in patients with GERD was 14.18 ± 0.65 teeth ($P \leq 0.01$) ... At the same time, in the structure of the CPU index in patients with GERD, carious teeth predominate: the average group value of the element "K" (caries teeth) was 5.72 ± 0.21 versus 2.06 ± 0.08 ($P \leq 0.01$) of teeth with caries in the control group, on the contrary, patients with GERD had a significantly lower number of filled teeth - element "P" 1.96 ± 0.08 versus 4.04 ± 0.12 ($P \leq 0.01$) and a significantly higher number of extracted teeth - element "Y" - 6.50 ± 0.31 versus 3.42 ± 0.14 ($P \leq 0.01$) (Tables 2.3). The revealed tendency was also traced in the analysis of the specific weight of individual elements that make up the CPU index: in the structure of the CPU index of patients with GERD, carious - element "K" and removed teeth - element "Y" prevailed; and in the control group, on the contrary, the greatest specific weight was accounted for by the element "P" - filled teeth; the corresponding ratios were - for the element "K" $40.34 \pm 2.44\%$ versus $21.50 \pm 3.35\%$ ($P \leq 0.01$); for the "P" element - $13.82 \pm 1.72\%$ versus $42.17 \pm 4.03\%$ ($P \leq 0.01$) and for the "U" element, respectively, $45.84 \pm 2.48\%$ versus $36.33 \pm 3.92\%$ ($P \leq 0.01$) (Table 2). A similar trend of a higher prevalence and intensity of caries in patients with GERD was registered in all studied groups of patients.

table 2

The structure of the CPU index in patients with gastroesophageal reflux disease and in the control group

Age and year	K	P	U	Index of KPU
Control group, n=150				
18-24, n=30	$0,90 \pm 0,04 /$ $29,80 \pm 8,37$	$1,22 \pm 0,06 /$ $40,39 \pm 8,96$	$0,90 \pm 0,03 /$ $29,80 \pm 8,35$	$3,03 \pm 0,14 /$ 100,0
25-34 n=35	$1,68 \pm 0,07 /$ $28,92 \pm 7,66$	$3,04 \pm 0,13 /$ $52,32 \pm 8,44$	$1,05 \pm 0,04 /$ $18,7 \pm 6,50$	$5,77 \pm 0,25 /$ 100,0
35-44 n=50	$2,11 \pm 0,09 /$ $20,19 \pm 5,68$	$4,59 \pm 0,18 /$ $43,92 \pm 7,02$	$3,75 \pm 0,15 /$ $35,88 \pm 6,78$	$10,45 \pm 0,51 /$ 100,0
45-54	$2,55 \pm 0,11 /$	$7,82 \pm 0,33 /$	$6,33 \pm 0,30 /$	$16,7 \pm 0,77 /$

n=20	15,27±8,04	46,83±11,16	37,90±10,85	100,0
55-65	4,52±0,22/	4,86±0,21/	9,03±0,04/	18,41±0,88/
n=65	24,55±11,11	26,40±11,38	49,05±12,91	100,0
bcero	2,06±0,08/	4,4±0,12/	3,42±0,14/	9,58±0,47/
	21,50±3,35	42,17±4,03	36,33±3,92	100,0
GERB patients, n=404				
18-24	2,78±0,12■/	1,18±0,44/	1,99±0,07■/	5,95±0,23/
n=66	46,72±6,14	19,83	33,45±5,81	100,0
25-34	3,68±0,15■/	2,13±0,11■/	2,02±0,09■/	7,83±0,33/
n=82	47,00±3,51	27,20	25,80±4,83	100,0
35-44	6,86±0,25■/	2,8±0,09■/	6,82±0,31■/	15,86±0,68/
n=170	43,25±3,80	13,75	43,00±3,80	100,0
45-54	8,69±0,41■/	2,00±0,10■/	11,50±0,44■/	22,19±0,10/
n=6	39,16±6,52	9,01	51,83±6,68	100,0
55-65	5,71±0,23■/	1,90±0,087■/	17,54±0,82■/	25,15±1,21/
n=30	22,70±7,65	7,55	69,74±8,39	100,0
bcero	5,72±0,21■/	1,96±0,06■/	6,50±0,31■/	14,18±0,65/
	40,34±2,44	13,82±1,72	45,84±2,48	100,0

Note: the numerator is the absolute value; in the denominator - in% of the KPU index;

■ - P < 0.05 in relation to the control.

It is known that gastroesophageal reflux disease is often accompanied by pathological changes in the hard tissues of the teeth. The leading link in the development of such syntropy is the depletion of the buffer properties of the oral fluid, due to the throwing of acidic gastric contents and bile acids into the oral cavity, which creates conditions for the development of pathogenic microflora and promotes the demineralization of dental hard tissues, since their enamel begins to lose surface calcium and phosphates. at pH below 6.2 [1.6.9]. Of no small importance are also the violations of a number of regulatory mechanisms accompanying the pathological process: immune imbalance, violation in the LPO-AOS system, changes in the metabolism of connective tissue, mineral metabolism, and vitamin deficiency. The pathology of the digestive system, reducing the nonspecific resistance of the body, contributes to the negative impact of the microflora in the oral cavity on the hard tissues of the teeth. Thus, the pathology of the gastrointestinal tract is a risk factor for the development and unfavourable course of chronic inflammatory diseases.

Table

4

Comparative analysis of the activity of the course of dental caries in patients with gastroesophageal reflux disease

Activity K3	Control group	БОЛЬНЫЕ с ГЭРБ			In total GERB n=404
		Non erosive form n=175	Erosive form n=126	Baretta's esophagus n=103	

	n=4150				
Compressed (1 st position)	50/ 33,33±3,85	12/ 6,86±1,91▪	6/ 4,76±1,90▪	-	18/ 4,46±1,03▪
Subcompensation (2 nd position)	60/ 40,0±4,0	65/ 37,12±3,65	34/ 26,98±3,95▪ ^x	26/ 25,24±4,28	125/ 30,94±2,30▪
Decompressed (3 rd position)	40/ 26,67±3,62	98/ 56,0±3,75▪	86/ 68,25±4,15▪ ^x	77/ 74,76±3,87▪ ^{xo}	261/ 64,60±12,38▪

Note: the numerator is the number of patients;

in the denominator - in% of the number of patients in the group;

▪ - P < 0.05 in relation to control, X - P < 0.05 in relation to NE GERD;

o - P < 0.05 in relation to EF GERD.

Many different cariogenic factors are involved in the development of carious lesions in patients with GERD. The dependence of the intensity of the course of dental caries on the presence of different variants of the course of GERD in patients was revealed. The combination of constantly acting influences in the oral cavity predisposes to the development of an active carious process. With an unfavourable confluence, all these factors lead to the development of an initial carious process, the activity of the course of which is largely determined by the severity of the appearance of somatic pathology.

A high activity of the course of caries was established in patients with GERD: a decompensated form of caries was found in 64.60 + 2.38% of patients versus the occurrence in 26.67 + 3.62% ($P \leq 0.05$) of patients in the control group; in the absence of statistical differences in the frequency of the sun compensated flow, which was, respectively, 30.94 + 2.30% versus 40.00 + 4.00% ($P \leq 0.05$); against the background of a significant decrease in the frequency of the compensated course - 4.46 + 1.03% versus 33.33 + 3.85% ($P \leq 0.05$) in the control group. A detailed analysis made it possible to establish a statistically significant increase in the prevalence of decompensated and a decrease in the prevalence of a compensated course with an increase in the severity of GERD (Table 4).

An important role in the systematization of various clinical forms of carious disease was played by the International Classification of Dental Diseases, the third revision - ICD-DA, WHO, 1995 in the original [8] and translated into Russian: ICD-10C-1997. The World Health Organization and the International Federation of Dentists (FDI) recommend that dental practitioners pay more attention to preventive measures rather than restorations [8].

In accordance with modern concepts, the carious process develops as a result of a complex interaction of general and local factors, which is realized in the system "microorganism - saliva - enamel structure". Among the most significant local risk factors for caries in patients with GERD, in addition to cariogenic microflora, including a violation of the composition and properties of mixed saliva, the effect of bile acids, a decrease in the pH of mixed saliva, a violation of Ca P balance, the presence of *Helicobacter Pylori* [5, 9, 10].

Despite a significant number of studies devoted to the problem of diseases of hard tissues of teeth in patients with GERD, it is promising to study the relationship of systemic and local pathogenetic mechanisms that determine the development of various diseases, as well as studies that detail the system of diagnosis, prevention and treatment of hard tissues of teeth in this vast contingent of patients.

The established high rates of activity of the carious process in patients with GERD require an individual approach to the treatment of hard tissue pathology, taking into account the course of the underlying disease.

Thus, the present study showed a high level of prevalence and intensity of dental caries, as well as the predominance of extracted and carious teeth in the CPU index in patients with GERD, which indicates the absence of a specially developed system for the treatment of hard tissues in this large category of patients and the need to improve their dental help.

Conclusions:

1. Examination of patients with different variants of the course of GERD showed a high (according to WHO criteria) intensity of dental caries. At the same time, the structure of the KPU index is dominated by carious - element "K" and removed - element "U" teeth. A statistically significant increase in the prevalence of decompensated and a decrease in the prevalence of compensated caries with an increase in the severity of GERD was established.

2. Based on the study of the structure of the "K" element, a relationship was established between the severity of carious lesions and the clinical course of GERD: with an increase in the severity of clinical manifestations, the absolute values and specific gravity in the structure of the "K" element of such nosological units as initial and suspended caries against the background of an increase in absolute values decrease and the specific gravity of dentin caries and cement caries

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УДК: 616.131.14:616.13/14-008.853.6-612.112.93

ТУЧНЫЕ КЛЕТКИ И ГЛИКОЗАМИНОГЛИКАНЫ В СЛИЗИСТОЙ ОБОЛОЧКЕ ПОЛОСТИ РТА ПРИ БОЛЕЗНИ БЕХЧЕТА

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