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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

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თანამშრომლობითა და მისი პატრონაჟით

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

ТБИЛИСИ - НЬЮ-ЙОРК

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board and The International Academy of Sciences, Education, Industry and Arts (U.S.A.) since 1994. **GMN** carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

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GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией и Международной академией наук, образования, искусств и естествознания (IASEIA) США с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения.

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GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

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При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

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2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

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ავტორთა საყურადღებოდ!

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1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

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6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

Содержание:

COMPARATIVE ASSESSMENT OF THE STATUS OF PERI-IMPLANT AND PARODONTAL TISSUES

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One of the controversial issues of modern dentistry is the assessment of how parodontitis arises or aggravates in the area of own teeth the severity of its course after installing orthopedic structures with support on dental implants affects the state of peri-implant tissues.

Based on clinical observations, Carcuac O. indicated that the risk of developing peri-implantitis in people with chronic parodontitis is very high [8]. Other authors, based on clinical studies of individuals in whom parodontitis went into a more severe stage after installing orthopedic structures with support on dental implants, concluded that in these patients the condition of the tissues surrounding the implants suffers less than the parodontium of own teeth [12,10].

Quirynen, five years after the installation of implants compared the condition of the tissues around the teeth and implants. It turned out that the implants had less epithelial gingival attachment than own teeth [3].

Based on his research, Ellegard B. concluded that in patients with parodontitis, the condition of the tissues surrounding the implants suffers less than the parodontitis of existing teeth, but the presence of parodontal disease is a significant risk factor for implants [11]. Microflora plays a key role in the development of peri-implantitis [1,2,5,6,9,13].

At the same time, traditional microbiological methods do not provide complete information about the composition of the microbial community of the peri-implant sulcus and pathological parodontal pockets of own teeth. Simple nutrient media do not provide the same possibility for the growth of various colonies of microorganisms, which leads to incorrect interpretation of the results [4].

Study [7] indicate that only with the help of molecular genetic methods it is possible to identify the quantitative and species composition of microbial communities in the area of various tissues of the oral cavity.

The aim of the research - using clinical, R-genological, molecular genetic methods of research, to give a comparative assessment of the condition of parodontal tissues of own teeth and peri-implant tissues in patients who have been using fixed orthopedic constructions with support on dental implants for the treatment of partial secondary adentia for more than 5 years.

Material and methods. To achieve this goal, we formed two groups of patients. Group 1 consisted of 34 patients (19 female and 15 male) who did not have secondary biological complications of dental implantation. The average age of patients in this group was (M 61.3±7.8 years, F 58.4±8.1 years) the average service life of orthopedic structures with support on dental implants was 8.3±2.3 years. The 2nd group consisted of 27 patients (15 f., 12 m.) who, on the basis of a clinical examination, R-gene examination, were diagnosed with: peri-implantitis in the area of one or more implants serving as a support for a fixed orthopedic structure. The average age of patients in this group was (M 63±8.2 years, F 59.6±7.7 years). The average service life of an orthopedic construction was 8.8±2.5 years.

Based on a clinical examination, analysis of panoramic R-graphs data, parodontal diagnosis was made to patients of the 1st and 2nd groups. Assessment of the status of peri-implant tissues and diagnosis of peri-implantitis was carried out based on the analysis of patient complaints, R-gene picture, the severity of inflammatory changes in soft peri-implant tissues. The severity of inflammatory changes in soft peri-implant tissues and soft tissues of the marginal parodontium was assessed using the Mombelli index [14].

A comparative assessment of the quantitative and species composition of microbial communities of pathological parodontal pockets and peri-implant sulcus was carried out in 12 patients of the 1st group. The contents of parodontal pockets and peri-implant sulcus were selected using sterile paper endodontic pins. Samples were placed directly in reagent tubes DNA - EXPRESS (RPC "*Litekh*" Russia).

For each patient, the material was taken from the parodontal tooth pocket (pocket depth of at least 6 mm) and the peri-implant sulcus of the implant, in the area with no clinical and radiological signs of peri-implantitis.

For a comparative assessment of the quantitative and species composition of microflora of pathological parodontal pockets (PPP) and peri-implant sulcus (PS) in patients was performed polymerase chain reaction (PCR) - diagnostics of microorganisms.

The presence and quantitative composition of the following pathogens were analyzed: Prevotella intermedia, Porphiromonas gingivalis, Aggregatibacter actinomycetem comitans, Treponema denticola, Porphirononas endodontalis, Fusobacterium nucleatum, Tonnerella foorsythia.

Amplification was performed on the device CFX96 (Bio-Rad, USA) using a set FLUOROPOL (RPC «*Mitech*» Russia), registration of a fluorescent signal was carried out through 2 channels – FAM/ROX HEX [15].

Statistical processing of the research results was carried out using the EXCEL program (version 11; standard Microsoft Office suite).

Results and discussion. Based on patient examinations, analysis of additional examination methods (panoramic R-graphy), we made a diagnosis: Generalized parodontitis of the I degree in 6 patients of the 1st group (17.6% of the total number of patients in the group) and 5 patients of the 2nd group (18.5% of the total number of patients in the group). Diagnosis: parodontitis of the II degree was made to 17 examined (50% of 1st group) and 13 (48% of 2nd group). Grade III parodontitis was detected in 11 patients (32.4%) of the 1st group and 9 (33.3%) – of 2nd group.

When R-genological examination of patients of the 1st group (conducting panoramic R-graphy was mandatory for each examination) in 33 implants (27%) of the total number established in patients of this group (122 - the total number of implants in patients of the group) defects in the bone tissue around the neck of the implant characteristic of peri-implantitis were identified (fig. 1, 2). At the same time, changes in the area of soft peri-implant tissues did not carry pronounced inflammatory manifestations, which did not give us grounds for making a diagnosis of peri-implantitis. The Mombelli soft-tissue index of these patients was 1.1±0.1, at the same time, in the parodontal tissues of own teeth in patients of this group, the Mombelli index was 2.2±0.33.

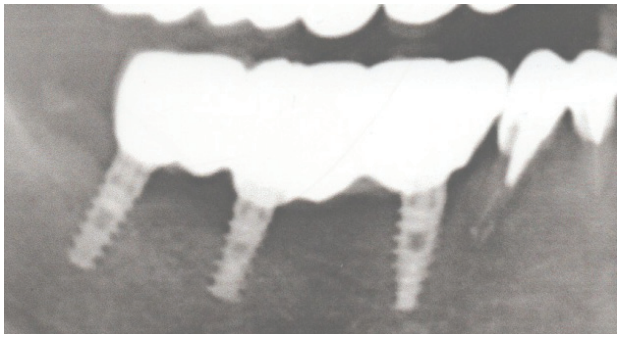


Fig. 1. R-graph of the patient 3 years after the installation of dental implants and fixed orthopedic structures with suppo-r007At on the lower jaw on the right.

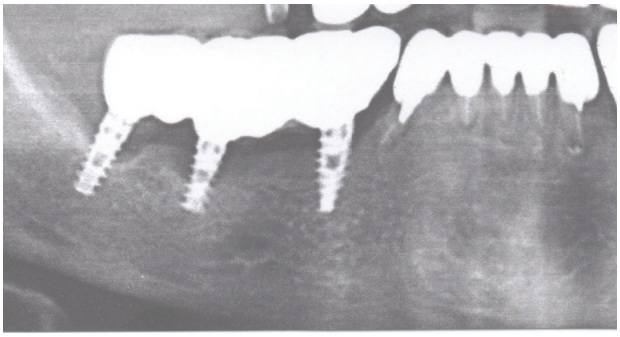


Fig. 2. R-graph of the same patient 10 years after the installation of dental implants and fixed orthopedic structures with support on the lower jaw on the right.

Table. Species and quantitative composition of microorganisms in the area of PPP of own teeth and peri-implant sulcus

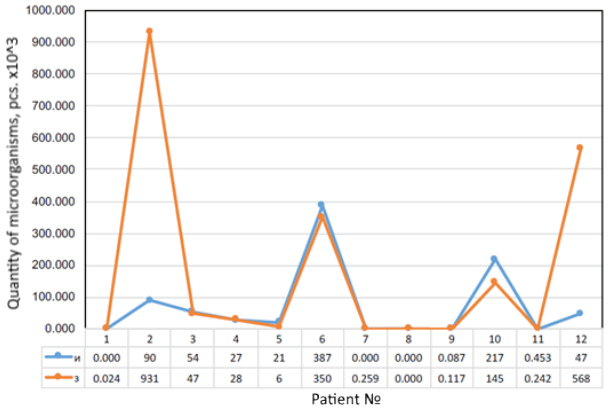
№ of patient	Place of material collection	Prevotella intermedia	Porphiromonas gingivalis	Aggregatibacter actinomycetem comitans	Treponema denticola	Porphirononas endodontalis	Fusobacterium nucleatum	Tonnerella foorsythia	SUM pcs., x10³	Tooth/ Implant Ratio
		Quantity, pcs., x10³	Quantity, pcs., x10³	Quantity, pcs., x10³	Quantity, pcs., x10³	Quantity, pcs., x10³	Quantity, pcs., x10³	Quantity, pcs., x10³		
111	Implant Tooth	0.024	56 6448		18 1780	61 2237	91 188	162 4627	387 15279	39.49
112	Implant Tooth	90 931	11938 2739	100	46 292	2768 5900	39 60	258 134	15139 10156	0.67
113	Implant Tooth	54 47	2842 108		57 0.783	205	0.519 0.199	1258 5345	4417 5501	1.25
114	Implant Tooth	27 28			209 203	272 398	15 85	2254 2904	2776 3617	1.30
115	Implant Tooth	21 6	113		240 8	2398 2	38 22	2454 5197	5149 5348	1.04
116	Implant Tooth	387 350	3803 876		1968 2239	1697 8398	15 48	2608 4850	10477 16762	1.60
117	Implant Ttooth	0.259	19166		4857	4303	149	7237	0 0	0
118	Implant Tooth			3				3 0.072	3 3	1.00
119	Implant Tooth	0.087 0.117	0.509		2		391 812	8 16	401 829	2.06
1110	Implant Tooth	217 145	94 459		26 187	2912 2129	1061 141	570 1866	4881 4927	1.01
1111	Implant Tooth	0.453 0.242			3 6	10 18	1 23	5 33	20 81	4.06
1112	Implant Tooth	47 568	1782 10475		40 798	1528 9272	12 133	1222 5561	4631 26807	5.79

The data of molecular genetic studies of patients of the 1st group were tabulated (table). In its analysis, the following draws attention to itself.

Prevotella intermedia. Not found in one patient, neither in the area of the PPP, nor in the area of peri-implant tissues (8.3%).

In two patients, P.intermedia was found in an insignificant amount in the region of PPP (16.6%).

Thus, we can say that in 24.9% of the examined patients P.intermedia is absent, or is determined in small quantities. The number of patients with P.intermedia in the area of peri-implant tissues and PPP highly differs and amounted to 2 people or 16,6% (fig. 3). In the remaining 9 patients (75% of the total number), the difference in the quantitative composition of this microorganism in the field of peri-implant tissues and PPP may be associated with the quantitative difference of the collected material.



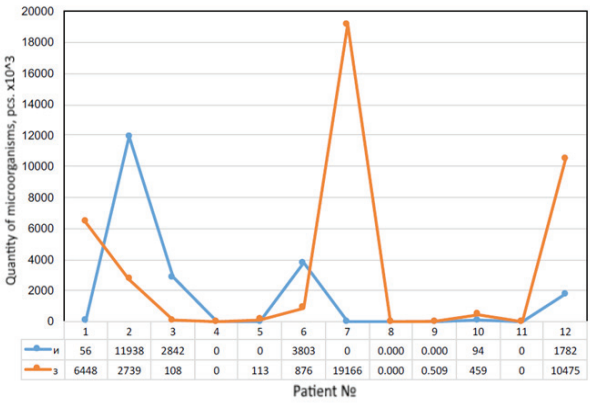
	1	2	3	4	5	6	7	8	9	10	11	12
и	0.000	90	54	27	21	387	0.000	0.000	0.087	217	0.453	47
з	0.024	931	47	28	6	350	0.259	0.000	0.117	145	0.242	568

Fig. 3. The quantitative composition of P.intermedia in the area of PPP and PS

Porphiromonas gingivalis. Not detected in three patients (25% of the total number of subjects). In three patients, it was found only in the area of PPP (25% of the examined).

Thus, P.gingivalis was not found in the area of peri-implant tissues in six subjects. (50%)

In 2 patients, the number of these microorganisms was significantly greater in the area of peri-implant tissues (16.6%), and in 3 patients (25%) the number of P.gingivalis in the area of peri-implant tissues was less than in the area of PPP. It should be noted that the quantitative difference in all cases was significant (fig. 4.)

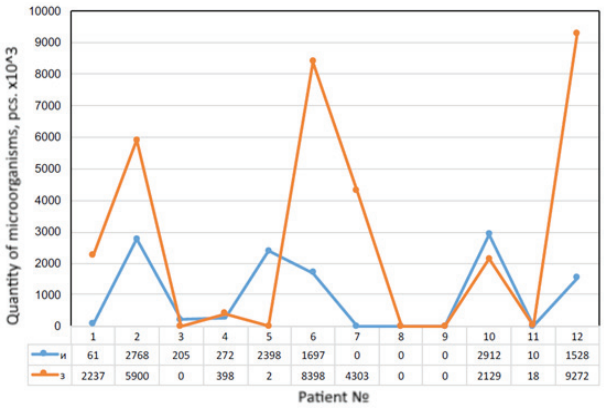


	1	2	3	4	5	6	7	8	9	10	11	12
и	56	11938	2842	0	0	3803	0	0.000	0.000	94	0	1782
з	6448	2739	108	0	113	876	19166	0.000	0.509	459	0	10475

Fig. 4. The quantitative composition of P.gingivalis in the area of PPP and PS

A.actinomycetemcomitans was found only in the region of PPP in two patients. In other patients, it was absent.

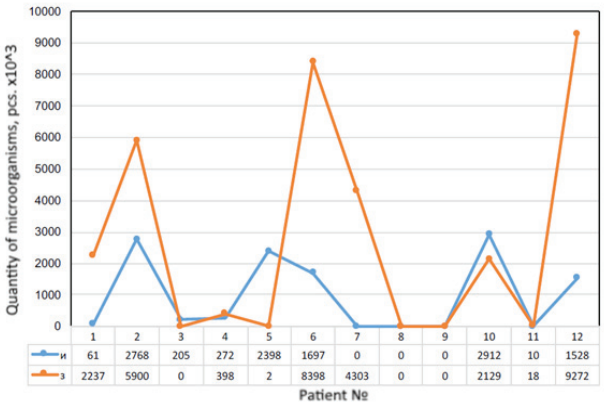
Treponema denticola. Was absent in one patient from all examined (8.4%). In one patient, it was absent in the area of peri-implant tissues. Thus, the studied microorganism is absent in the area of peri-implant tissues in 16.6%. In one patient, it was present only in the area of PPP (8.4%). In one patient, 8.4% T.denticola in the area of peri-implant tissues was much higher than in the area of PPP, in three patients, the amount of T.denticola was much higher in the area of PPP (25%). In 5 patients, the difference in the amount of this microorganism in the area of PPP and peri-implant tissues did not differ significantly 41.6% (fig. 5).



	1	2	3	4	5	6	7	8	9	10	11	12
и	61	2768	205	272	2398	1697	0	0	0	2912	10	1528
з	2237	5900	0	398	2	8398	4303	0	0	2129	18	9272

Fig. 5. The quantitative composition of T.denticola in the area of PPP and PS

Porphirononas endodontalis. Absent in 2 patients (16.6%) was not found in the patient's PPP area (8.4% of the subjects), and in one patient in the area of peri-implant tissues (8.4% of the subjects). The number of P. endodontalis in two patients was significant in the area of peri-implant tissues (16.6% of examined) and in one in the area of PPP (8.4% of the subjects). In five patients (41.6% of the subjects), the amount of P.endodontalis in the area of PPP and peri-implant tissues did not differ significantly (fig. 6).



	1	2	3	4	5	6	7	8	9	10	11	12
и	61	2768	205	272	2398	1697	0	0	0	2912	10	1528
з	2237	5900	0	398	2	8398	4303	0	0	2129	18	9272

Fig. 6. The quantitative composition of P. endodontalis in the area of PPP and PS.

Fusobacterium nucleatum. Not detected in one patient (8.4% of the subjects), in one patient, it was not found in the area of peri-implant tissues (8.4% of the subjects). The number of F.nucleatum in two patients (16,6% of the total number of subjects) prevailed in the area of PZDK much higher (16.6% of the total number of subjects). In one patient, this microorganism prevailed in the area of peri-implant tissues (8.4% of the subjects). In 7 patients (58.3% of the subjects), the content of F.nucleatum in the area of peri-implant tissues and in the area of PPP was comparable (fig. 7).

Tonnerella foorsythia. The only microorganism that was found in all examined patients. In one patient, this microorganism was absent in the area of peri-implant tissues (8.3%). In two patients (16.6% of the total number of examined), this microorganism prevailed in the area of peri-implant tissues (albeit slightly), in three (25%) in the area of PPP. In 7 patients (58.3%), the amount of this microorganism was comparable both in the area of PPP and peri-implant tissues (fig. 8).

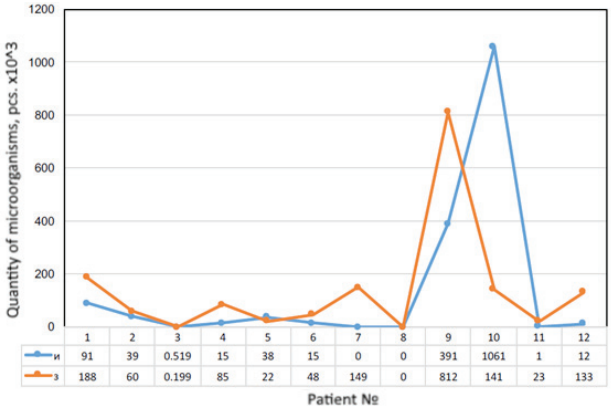


Fig. 7. The quantitative composition of F.nucleatum in the area of PPP and PS

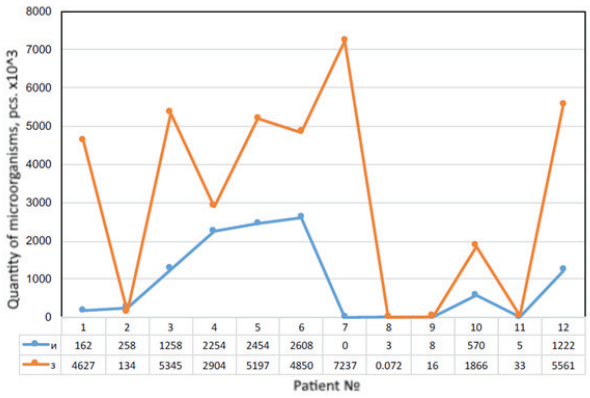


Fig. 8. The quantitative composition of T.forsythia in the area of PPP and PS

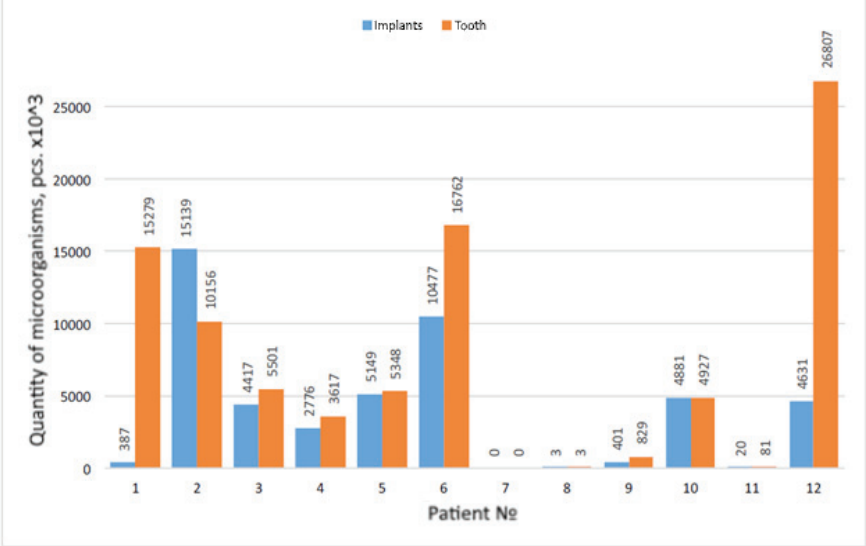


Fig. 9. The total number of microorganisms in the area of PPP and PS

Based on the data (fig. 1-6), a diagram was constructed (fig. 9).

Based on the analysis of the species composition of the microflora of the examined patients, it is clear that only Tonnerella forsythia was detected in all examined. P.intermedia and P.gingivalis were absent or determined in small quantities in 25% of the subjects, respectively. P. endodontalis was absent in 16.7% of subjects, and T.denticola and F.nucleatum in 8.3% of subjects, respectively. A.actinomycetemcomitans was detected in two patients; in the remaining subjects, this microorganism was not detected. It should be noted that in both subjects this type of microorganism was detected only in the area of PPP, while in one patient its quantity was insignificant.

The studied microorganisms are evenly distributed in the oral cavity, regardless of where they were taken (peri-implant tissues or PS). P.intermedia, P.endodontalis, F.nucleatum, T.foorsythia were in most cases found in comparable quantities both in the area of peri-implant and in the area of the PPP of own teeth.

At the same time, P.gingivalis was mainly localized, either in the region of the PPP of own teeth (25% of the examined) or in the area of peri-implanted tissues (16.6%), and only in 8.3% of the subjects it did not have the primary localization. T.denticola did not predominantly localize in any patient. In 25%, it was mainly quantified in the area of peri-implant tissues, in 25%: in the area of the PPP of own teeth, and in 25% of the subjects in comparable quantities, it was detected in both places of sampling.

PPP of own teeth contains a larger species composition of the studied microorganisms than near implant tissues. Only in two patients, the studied type of microorganism, if it was determined in the oral cavity, was not found in the PPP area of own teeth (in one case T.denticola and in one case P.endodontalis). At the same time, the number of patients in whom the studied microorganisms were absent in the area of peri-implant tissues in the oral cavity was 10 people. Two patients did not have P.intermedia, three P.gingivalis, one A.actinomycetemcomitans, T.denticola, P.endodontalis, F.nucleatum, T.foorsythia were absent in the area of peri-implanted tissues of the oral cavity.

In one patient (8.3% of the total number of subjects), out of 7 microorganisms that we determined, 5 were absent in the oral cavity. P.intermedia, P.gingivalis, T.denticola, P.endodontalis, F.nucleatum.

In one patient, the studied microorganisms were absent in the area of peri-implant tissues.

Three did not have 3 studied microorganisms (P.gingivalis, A.actinomycetemcomitans, P.endodontalis) in the area of peri-implant tissues.

If in a patient this microorganism is present in the oral cavity, then in only one patient it was absent in the PPP (P.endodontalis).

When analyzing the table, it is noteworthy that the ratio of microorganisms in the area of PPP and peri-implant sulcus in only three patients differs by more than two times. At the same time, each of them had a total biomass of microorganisms in the area of PPP that exceeded the total biomass in the area of peri-implant tissues. A comparative analysis of the quantity of microorganisms in PPP and peri-implant sulcus of the examined patients is shown in figure 9. When analyzing it, it should be noted that the total contamination of the studied microorganisms is an individual value for each patient. So, in four patients (33.3% of the total number of subjects), the contamination of the studied microorganisms compared with others in the area of PPP and in the area of peri-implant sulcus is insignificant. n six examined patients (50% of the total), the contamination of the studied microorganisms is much higher. At the same time, it can be said that the total biomass in the area of PPP and peri-implant tissues in all ten patients (83.3% of the total number of subjects) did not differ in quantitative terms and is an individual value in each patient. The difference in the height of the columns of the diagrams is associated with a different amount of selected material.

In three patients, a significantly larger quantity of microorganisms in the area of PPP can be explained by the large number of selected material, as well as the severity of the process in parodontal tissues. This is especially true for the first patient, in whom the difference between the total number of studied microorganisms in the area of PPP and peri-implant sulcus is higher than 39.5 times. In the eleventh and twelfth patients, this difference was 4.6 and 5.8 times, respectively. The obtained data indicate that microbial contamination by microorganisms in most cases (75% of the examined patients) does not have a predominant localization. Moreover, the number of microorganisms is individual for each patient. From our point of view, the localization of microorganisms is due to the peculiarity of the parodontitis course, as well as to a significantly larger amount of selected biomaterial.

In a comparative analysis of the species composition of microorganisms in the tissues of PPP and PS, the quantitative and species composition of microorganisms is identical in 75% of the examined patients and is individual for each patient. At the same time, it should be noted that under such circumstances in the area of own teeth, the subjects observed deep destructive changes in the parodontal tissues, which were accompanied by inflammatory phenomena in the region of the marginal gum, and during X-ray examination, a significant decrease in bone tissue with the formation of a peculiar bone pocket.

At the same time, there were no pronounced inflammatory phenomena in the area of peri-implant tissues; during X-ray examination, there was no decrease in bone tissue in the neck of the implant with the formation of a peculiar pocket.

Conclusions. Based on the foregoing, the following conclusion can be made: the resistance of microbial invasion of peri-implant tissues is higher than the parodontal tissues of own teeth. The following findings speak in favor of this:

1. There was no correlation between the severity of generalized parodontitis and the presence of secondary biological complications of dental implantation. In patients of the 1st group (without secondary biological complications of dental implantation), a diagnosis of generalized parodontitis of the first degree was diagnosed in 17.6%; II degree – 50%; III degree – 32.4%. In patients of the 2nd group with secondary biological complications, generalized parodontitis of the first degree was observed in 18.5%, II degree – 48%, III degree – 33.3% пациентов.

2. The Mombelli index in patients of the 1st group (without secondary biological complications) in the area of dental implants was 1.1±0.1, while in the parodontal tissues of own teeth this index was 2.2±0.33.

3. When using the molecular genetic method to study the microflora composition of the peri-implant sulcus and PPP of own teeth in patients without secondary complications of dental implantation, it was found that the quantitative and species composition of microflora is identical in 75% of the subjects, while there are no pronounced inflammatory phenomena in the area of peri-implant tissues, at the same time, they have different degrees of severity in the area of the marginal parodontium of own teeth.

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SUMMARY

COMPARATIVE ASSESSMENT OF THE STATUS OF PERI-IMPLANT AND PARODONTAL TISSUES

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One of the controversial issues of modern dentistry is the assessment of how parodontitis arises or aggravates in the area of own teeth the severity of its course after installing orthopedic structures with support on dental implants affects the state of peri-implant tissues. Using clinical, R-genological, molecular genetic methods of research, to give a comparative assessment of the condition of parodontal tissues of own teeth and peri-implant tissues in patients who have been using fixed orthopedic constructions with support on dental implants for the treatment of partial secondary adentia for more than 5 years.

To achieve this goal, we formed two groups of patients. Group 1 consisted of 34 patients (19 female and 15 male) who did not have secondary biological complications of dental implantation. The average age of patients in this group was (m. 61.3±7.8 years, f. 58.4±8.1 years) the average service life of orthopedic structures with support on dental implants was 8.3±2.3 years. The 2nd group consisted of 27 patients (15 f., 12 m.) who, on the basis of a clinical examination, R-gene examination, were diagnosed with: peri-implantitis in the area of one or more implants serving as a support for a fixed orthopedic structure. The average age of patients in this group was (m. 63±8.2 years, F 59.6±7.7 years). The average service life of an orthopedic construction was 8.8±2.5 years.

In a comparative analysis of the species composition of microorganisms in the tissues of pathological parodontal pockets and peri-implant sulcus, the quantitative and species composition of microorganisms is identical in 75% of the examined patients and is individual for each patient. Based on a clinical examination, analysis of panoramic R-graphs data, parodontal diagnosis was made to patients of the 1st and 2nd groups.

Based on a comparative assessment of the status of parodontal peri-implant tissues, their microbial contamination, in patients who successfully used fixed orthopedic constructions supported by dental implants to replace partial dentition defects for more than 5 years, it was found that the resistance of microbial invasion of peri-implant tissues is higher than the parodontal tissues of own teeth.

Keywords: pathological parodontal pocket, peri-implantitis, parodontitis, microorganisms

РЕЗЮМЕ.

СРАВНИТЕЛЬНАЯ ОЦЕНКА СОСТОЯНИЯ ПЕРЕИМПЛАНТНЫХ И ТКАНЕЙ ПАРОДОНТА

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Цель исследования - с использованием клинических, рентгенологических, молекулярно-генетических методов исследования дать сравнительную оценку состояния тканей пародонта собственных зубов и переимплантных тканей у пациентов более 5 лет пользующихся несъемными ортопедическими конструкциями с опорой на дентальные имплантаты для лечения частичной вторичной адентии.

Наблюдались две группы пациентов: первую группу составили 34 пациента, 19 женщин, 15 мужчин, у которых отсутствовали вторичные биологические осложнения дентальной имплантации. Средний возраст пациентов этой группы составил 61,3±7,8 лет у мужчин, 58,4±8,1 года у женщин, средний срок службы ортопедических конструкций с опорой на дентальные имплантаты - 8,3±2,3 года. Вторую группу составили 27 пациентов, 15 женщин, 12 мужчин, у которых на основании клинического осмотра и рентгенологического обследования поставлен диагноз: переимплантит в области одного или нескольких имплантатов, служащих опорой несъемной ортопедической конструкции. Средний возраст пациентов этой группы составил 63±8,2 года у мужчин, 59,6±7,7 лет у женщин, средний срок службы ортопедической конструкции - 8,8±2,5 лет.

При сравнительном анализе видового состава микроорганизмов в тканях патологических зубодесневых карманов и переимплантной борозды количественный и видовой состав микроорганизмов у 75% обследуемых пациентов был идентичный и у каждого пациента индивидуальный.

На основании клинического осмотра, анализа данных панорамных рентгенографий пациентам первой и второй групп поставлен пародонтологический диагноз.

На основании сравнительной оценки состояния переимплантных тканей пародонта, их микробной обсемененности, у пациентов, которые успешно пользовались несъемными ортопедическими конструкциями с опорой на дентальные имплантаты для замещения частичных дефектов зубных рядов более 5 лет, установлено, что сопротивляемость микробной инвазии переимплантных тканей больше, чем тканей пародонта собственных зубов.

რეზიუმე

პაროდონტის და პერიიმპლანტური ქსოვილების მდგომარეობის შედარებითი შეფასება

ე.სემიონოვი, ს.შნაიდერი, ო.სენნიკოვი, მ.ხრისტოვა, ა.ნიკოლაევა

უკრაინის მედიცინის მეცნიერებათა ეროვნული აკადემიის სტომატოლოგიის და ყბა-სახის ქირურგიის ინსტიტუტი, ოდესა, უკრაინა

კვლევის მიზანს წარმოადგენდა საკუთარი კბილების პაროდონტის ქსოვილების და პაციენტების (ნაწილობრივი მეორადი ადენტიის მკურნალობის მიზნით 5 წელზე მეტი ხნის განმავლობაში მოუხსნელი ორთოპედიული კონსტრუქციების გამოყენებით, დენტალურ იმპლანტანტებზე დაყრდნობით) პერიიმპლანტური ქსოვილების მდგომარეობის შედარებითი შეფასება კვლევის კლინიკური, რენტგენოლოგიური და მოლეკულურ-გენეტიკური მეთოდების გამოყენებით.

დაკვირვების ქვეშ იმყოფებოდა პაციენტების ორი ჯგუფი: I ჯგუფი, 34 პაციენტი (19 ქალი, 15 მამაკაცი), რომელთაც არ აღენიშნებოდათ დენტალური იმპლანტაციის მეორადი ბიოლოგიური გართულებები. პაციენტების საშუალო ასაკი: მამაკაცების - 61,3±7,8 წ., ქალების – 58,4±8,1; დენტალურ იმპლანტანტებზე დაყრდნობილი ორთოპედიული კონსტრუქციების გამოყენების საშუალო ვადა - 8,3±2,3 წ. II ჯგუფი შეადგინა 27 პაციენტმა (15 ქალი, 12 მამაკაცი), რომელთაც კლინიკური დათვალიერების და რენტგენოლოგიური კვლევის საფუძველზე დაესვათ დიაგნოზი: პერიიმპლანტიტი ერთი, ან რამდენიმე იმპლანტის მიდამოში, რომლიც წარმოადგენს საყრდენს მოუხსნელი ორთოპედიული კონსტრუქციისათვის. პაციენტების საშუალო ასაკი: მამაკაცების - 63±8,2 წ., ქალების – 59,6±7,7; დენტალურ იმპლანტანტებზე დაყრდნობილი ორთოპედიული კონსტრუქციების გამოყენების საშუალო ვადა - 8,8±2,5 წ.

პათოლოგიური კბილ-ღრძილოვანი ჯიბეების ქსოვილებში და პერიიმპლანტურ ნაოჭში მიკრორგანიზმების სახეობრივი შემადგენლობის შედარებითი ანალიზის შედეგების მიხედვით, მიკროორგანიზმების რაოდენობრივი და სახეობრივი შემადგენლობა გამოკვლეული პაციენტების 75%-ს აქვს იდენტური და თითოეულ პაციენტს ინდივიდური.

კლინიკურ დათვალიერების, პანორამული რენტგენოგრაფიის მონაცემების ანალიზის საფუძველზე I და II ჯგუფების პაციენტებს დაესვა პაროდონტოლოგიური დიაგნოზი.

პაროდონტის პერიიმპლანტური ქსოვილების მდგომარეობის, მათი მიკრობული მოთესვიანობის შედარებითი შეფასების საფუძველზე პაციენტებში, რომლებიც კბილთა რიგების ნაწილობრივი დეფექტების შესავსებად 5 წელზე მეტი ხნის განმავლობაში წარმატებით იყენებდნენ მოუხსნელ ორთოპედიულ კონსტრუქციებს დენტალურ იმპლანტანტებზე დაყრდნობით დადგენილია, რომ პერიიმპლანტური ქსოვილების წინააღმდეგობა მიკრობული ინვაზიისადმი უფრო მაღალია, ვიდრე საკუთარი კბილების პაროდონტის ქსოვილებში.

FREQUENCY OF PRESENCE OF PERIODONTOPATHOGENIC BACTERIA IN THE PERIODONTAL POCKETS

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Periodontitis is considered as one of the most common diseases worldwide [5,6,17]. 8 out of 10 patients are suffering from periodontitis of varying severity. The downward trend in the age threshold also attracts lots of attention from specialists [3,10]. Periodontium complex inflammatory diseases are known to be infections caused by bacteria colonizing the tooth surface, gingival margin, and subgingival environment [1,7-9,18]. Chronic periodontitis and peri-implantitis are initiated by unique pathogenic bacteria of the so-called “red and bricky” complex detected in tooth bio-membrane: Aggregatibacter actinomycetemcomitans, Porphyromonas Gingivalis, Prevotella Intermedia, Tannerella Forsythia and Treponema Denticola [1,8,9,12,14-16]. The main mechanism for disease prevention and treatment consists in regular removal of bacterial biofilm accumulated on the tooth surface using mechanical forms of therapy (Ultrasound, Vector or Laser Therapy) and for periodontitis, stage III - IV - Level A, B or C – as well as abscessed form of periodontitis according to new classification (22.07.2018 Amsterdam), taking this measure alone may be insufficient, therefore the use of combined mechanical forms of therapy and systemic antibiotic therapy is necessary to ensure effective treatment and reduce the relapse rate of severe periodontitis [1,2,4,11,13].

In view of all the above mentioned, the purpose of this study was to evaluate the efficiency of different mechanical forms of periodontal treatment therapy: Ultrasound, Vector or Laser Therapy. To achieve the above aim it is needed to detect the pathogenic markers, identify their types, qualitative content and encounter frequency in periodontal pockets of the patients with periodontitis, before and after treatment. According to the study results an optimal individualized patient-centered treatment plan has been developed.