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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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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 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.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией 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. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

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.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

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).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

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.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

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.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

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.

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BACTERIAL CONTAMINATION AND METHODS OF DECONTAMINATION OF BASES COMPLETE REMOVABLE PROSTHESES DURING THE APPLICATION OF ADHESIVE MATERIALS

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Abstract.

Introduction: It turned out that the permanent microbiota of surfaces of acrylic bases of complete removable plastic dentures (CRPD) characterized by several features: the presence of aerobic (7) and anaerobic (10) species. Qualitative and quantitative compositions of microbiocenosis in orthopedic treatment stages have been changed. The revealed patterns require further study in the context of the improvement of decolonization of acrylic bases in the stages of orthopedic treatment by CRPD. Deactivation of acrylic bases of CRPD significantly affects the species composition of microbiota, reduces the quantitative parameters of bacterial contamination.

Purpose: The purpose of our work was determination of bacterial contamination of acrylic bases of CRPD in stages of their clinical exploitation and study of changes in the quantitative composition of the acrylic bases microbiota of CRPD under different decontamination modes.

Materials and methods: Smears from the inner surface of the acrylic base were stained with Gram and microscopic and seeded on blood agar, Endo agar, Chistovich, Saburo. Species belonging to the micro-organisms were identified by the LAHEMA test system and were determined in colonies forming units (CFUs).

Results: These data indicate accumulation under the acrylic base in the course of clinical operation of certain types of microbiota, which requires improvement of the methods of their decontamination. We studied the change in the quantitative and specific composition of the microbiota (bacterial contamination) of acrylic bases CRPD under different modes ("A", "B"). Patients in group "A" used the Sideex solution - a two-component system consisting of a liquid component (glutaraldehyde solution) and a powdery activator, mixed before use to obtain a working activated solution. The liquid component is a clear, colorless solution with a specific odor, which is a 2.2 - 2.7% aqueous solution of glutaraldehyde, which is an active ingredient, pH = 3.0 - 4.5. Powdery activator is a pale-yellow powder containing alkaline components, a corrosion inhibitor, and a dye. The activated working solution is a fluorescent green solution with a specific odor and containing 2.2 - 2.7% glutaraldehyde; pH = 8.2 - 9.2. (Great Britain). Preparation of the activated solution: a powder-activator is added to the container containing the liquid component (avoiding losses). Cleaning is carried out by the method of full immersion of the prosthesis in solution, with a thickness of the drug over it not less than 1 cm. The dentures are soused in solution for 15 minutes, then thorough washing in the same solution for 1-3 minutes. Sideex activated solution is used for sterilization and disinfection of metal, glass, polymeric (plastic, rubber, etc.) medical products. The dentures of patients from group "B" are decontaminated with 0.2% solution of chlorhexidine bigluconate. The dentures were placed in the solution overnight for 14 days, changing the solution every two days. The decontamination of acrylic bases of CRPD should be considered mode "B" as more effective because of the significant decrease in the species composition of the microbiota (the qualitative indicator of reduction of microbial contamination was 72.0%).

Conclusion: It is substantiated that decontamination of acrylic bases of CRPD with mode "A" has a small effect on the species composition of the microbiota, although it significantly ($p<0.05$) reduces quantitative indicators of microbial contamination. Regarding "B" mode, the species composition of aerobes from 31 lgCFU/ml to 8.7 lgCFU/ml and anaerobes from 42.7 lgCFU/ml to 14.6 lgCFU/ml was considered more effective.

Key words. Decontamination, bacterial contamination, complete removable plastic denture, microbiota.

Introduction.

According to many authors, the causes of diseases of the oral mucosa are both external (local) and internal (common) factors, which stand in close interdependence. Complete removable denture patients have oral candidosis of the mucosa. Candida belongs to the resistant flora of the oral cavity and found in 100% of healthy people [1,2].

In the oral cavity, the fungus exists in two forms:

1. in the form of yeast cells (blastospores) with a diameter of 1 - 4 microns.
2. pseudo mycelia or mycelium of the fungus in the form of filaments with a thickness of 1.5 - 4.0 microns.

Yeast cells, fungi, and predacious fungi in the budding parasitism. The number of cells of the genus Candida and their morphological features are important for clarifying the relationship of the fungus with the human body (saprophyticism or parasitism). Fungi destroys plastic and secretes organic acids: citric, oxalic, succinic, acetic, gluconic, lactic [3,4].

As the plastic ages, its physicochemical properties change, and for the best development of the fungi conditions are arising. The metabolic products of the Candida (organic acids, CO_2, pigments) are found in inspection (pigmentation of removable plastic prostheses), as well as by laboratory analysis of material taken from the dentures. Favorite place of the fungi - corners of the mouth, tongue, palate. In the corners of the mouth cracks covered with crusts; tongue folded, coated, intensely corpulent [5-7].

It is believed that candidiasis stomatitis is characterized by a triad: inflammation of the palate, tongue, corners of the mouth, while the diagnosis is established without laboratory examination [8-10]. Complete removable denture patients with oral candidiasis which use removable dentures with acrylic base, the underlying mucous membrane is hyperemic, swollen,

papillomatosis, dryness is often observed, i.e., the clinical picture is reminiscent of allergic inflammation or mechanical irritation by a removable prosthesis [11,12]. The patients complain of a burning sensation of mucous membranes under the removable denture base, in the upper jaw more often. The burning is constant, exacerbated by the consumption of acidic food. During the survey and examination reveal long life of prostheses (more than 3 years), as well as poor hygienic care for them. Patients often have concomitant diseases: diabetes, glossalgia. In such patients, the protective mechanisms of the soft tissues of the oral cavity are significantly reduced and therefore the irritating effect of the dentures is pathogenic. This requires particularly careful examination and comprehensive treatment [13-15].

In the course of clinical application, the choice of adhesive material, as well as the patient's decontamination mode, of CRPD becomes important [16,17]. This circumstance is related to the potential danger of bacterial contamination of acrylic bases of CRPD, the accumulation and, subsequently, the possible growth of microbiota on its surface during the clinical application of adhesive materials [18,19].

The purpose of our work was to determine of bacterial contamination of CRPD acrylic bases in stages of their clinical exploitation and study of changes in the quantitative composition of the acrylic bases microbiota of CRPD different decontamination modes.

Materials and Methods.

At the stages of clinical exploitation (at the time of manufacture, after 14 and 30 days), the bacterial contamination of acrylic bases was investigated in 30 patients who had complete removable plastic prostheses with using adhesive material [20-22].

During clinical exploitation stages of CRPD (at the time of manufacture, after 14 and 30 days) in 30 patients with CRPD and using adhesive material the bacterial contamination of acrylic base has been investigated [20-22].

Smears from the inner surface of the acrylic base were stained with Gram and microscopic and seeded on blood agar, Endo agar, Chistovich, Saburo [23]. Species belonging to the micro-organisms were identified by the LAHEMA test system and were determined in colonies forming units (CFUs) [24]. As statistical processing methods, the method of direct counting in the Goryaev counting chamber is used, which is a special glass slide with transverse slots applied to it, forming three transverse flat areas. The middle platform is divided by a longitudinal slot into two more platforms, each of which has a grid engraved on it with squares of a certain area. On both sides of the middle platform in the Goryaev chamber, there are two others 0.1 mm higher than the middle one. The planes of these areas are for grinding in the cover before the appearance of the so-called Newtonian rings [25].

Based on these prerequisites, we studied the change in the quantitative and specific composition of the microbiota (bacterial contamination) of acrylic bases CRPD under different modes ("A", "B"). Patients in group "A" used the Sideex solution - a two-component system consisting of a liquid component (glutaraldehyde solution) and a powdery activator, mixed before use to obtain a working activated solution. The liquid component is a clear, colorless solution with a specific odor, which is a 2.2 - 2.7% aqueous solution of glutaraldehyde, which is an active ingredient, pH = 3.0 - 4.5. Powdery activator is a pale-yellow powder containing alkaline components, a corrosion inhibitor, and a dye. The activated working solution is a fluorescent green solution with a specific odor and containing 2.2 - 2.7% glutaraldehyde: pH = 8.2 - 9.2. (Great Britain). Preparation of the activated solution: a powder-activator is added to the container containing the liquid component (avoiding losses). Cleaning is carried out by the method of full immersion of the prosthesis in solution, with a thickness of the drug over it not less than 1 cm. The dentures are soused in solution for 15 minutes, then thorough washing in the same solution for 1-3 minutes. Sideex activated solution is used for sterilization and disinfection of metal, glass, polymeric (plastic, rubber, etc.) medical products.

The dentures of patients from group "B" are decontaminated with 0.2% solution of chlorhexidine bigluconate. The dentures were placed in the solution overnight for 14 days, changing the solution every two days.

Results.

It was found that the permanent microbiota of the acrylic bases surfaces of CRPD is characterized by individual features: the presence of aerobic (7) and anaerobic (10) species, and also changes of its qualitative and quantitative composition at the stages of orthopedic treatment (Table 1 and Figure 1). Comparative assessment of bacterial contamination of bases proves that their surface after 14 days is characterized by an increase in bacterial contamination due to Candida albicans - before treatment 1.6 ± 0.1, after 14 days - 2.3 ± 0.1, after 30 days – 2.6 ± 0.1 CFU: ($p < 0.05$).

In addition, bacterial contamination is manifested by the accumulation in the remote period of Staphylococcus Saprophyticus: before treatment 3.7 ± 0.2, after 14 days - 4.3 ± 0.1, after 30 days - 4.5 ± 0.1 CFU; ($p < 0.05$).

The identified patterns require further study in the context of improving the decontamination of acrylic bases at the stages of orthopedic treatment by CRPD. Overall, the total number of microorganisms per patient during the clinical operation of CRPD ranged from (13.2 ± 04) to (13.3 ± 0.4), i.e., did not change significantly ($p > 0.05$), which testifies to the sustainability of oral microbiocenosis.

It was found that the specific gravity and absolute number of individual microorganisms in smears from acrylic bases increased significantly ($p<0.05$) after 14 days of clinical use of CRPD. Thus, from (1.60 ± 0.11) to (2.31 ± 0.11) the indicators of CFU Candida albicans and Staphylococcus Saprophyticus increased from (3.87 ± 0.08) to (4.27 ± 0.11) CFU. After 30 days of clinical use of dentures significantly ($p<0.05$) compared with the first period increased CFU indicators of Lactobacterium sp. (from (5.40 ± 0.23) to (5.86 ± 0.08) CFU; $p < 0.05$), Candida albicans (from (1.60 ± 0.11) to ($2.60 \pm 0,10$) CFU; $p<0.05$), Staphylococcus saprophyticus (from (3.87 ± 0.08) to (4.50 ± 0.10) CFU; $p<0.05$) Staphylococcus aureus (from ($3, 64 \pm 0.10$) to (4.40 ± 0.10) CFU; $p<0.05$).

These data indicate accumulation under the acrylic base in the course of clinical operation of certain types of microbiota, which requires improvement of the methods of their decontamination.

Table 1. *Microbiocenosis (lg CFU / ml) and species composition of bacterial contamination of bases of complete removable plastic dentures in different stages of clinical operation.*

Microorganisms			**Bacterial contamination acrylic bases complete removable plastic dentures**		
			first day (n_1=30)	**14 days (n_2=30)**	**30 days (n_3=30)**
Anaerobes	Bacteroides sp.		4,40±0,23	4,53±0,24	4,60±0,20
	Peptococcus sp.		4,50±0,21	4,63±0,29	4,70±0,30
	Peptostreptococcus sp.		4,60±0,34	4,72±0,36	4,73±0,37
	Fusobacterium sp.		3,28±0,23	3,44±0,24	3,50±0,24
	Lactobacterium sp.		5,40±0,23	5,53±0,12	5,86±0,08
	Veillonella sp.		4,00±0,25	3,88±0,21	4,10±0,20
	Prevotella sp.		4,50±0,23	4,50±0,23	4,40±0,20
	E.coli		3,00±0,19	2,94±0,21	3,10±0,2
	Klebsiella sp. pneumoniae		5,00 ±0,27	4,87±0,26	5,10±0,19
	Candida albicans		1,60±0,11	2,31±0,11*	2,60±0,10
Aerobes	Staphylococcus saprophyticus		3,87±0,08	4,27±0,11*	4,50±0,10*
	Staphylococcus aureus		3,64±0,10	3,92±0,10	4,40±0,10
	Staphylococcus epidermidis		3,85±0,20	4,08±0,20	4,40±0,20
	Streptococcus pyogenes		6,41±0,30	6,50±0,40	6,50±0,35
	Streptococcus mitis		5,93±0,20	6,13±0,30	6,00±0,30
	Corynebacterium sp.		3,31±0,20	3,57±0,20	3,50±0,20
	Neisseria sp.		2,00±0,20	2,2±0,10	2,10±0,20
Aerobic microorganisms		abs,CFU/ml	28,90±0,6	30,7±0,6	31,0±0,6
		%	41,6	42,7	42,1
Anaerobic microorganisms		abs,CFU/ml	40,7±0,3	41,3±0,3	42,7±0,3
		%	58,4	57,3	57,9
Total		abs,CFU/ml	69,6±1,8	72,0±2,4	73,7±2,6
		%	100,0	100,0	100,0

*Note: * p <0.05 when compared with the first day.*

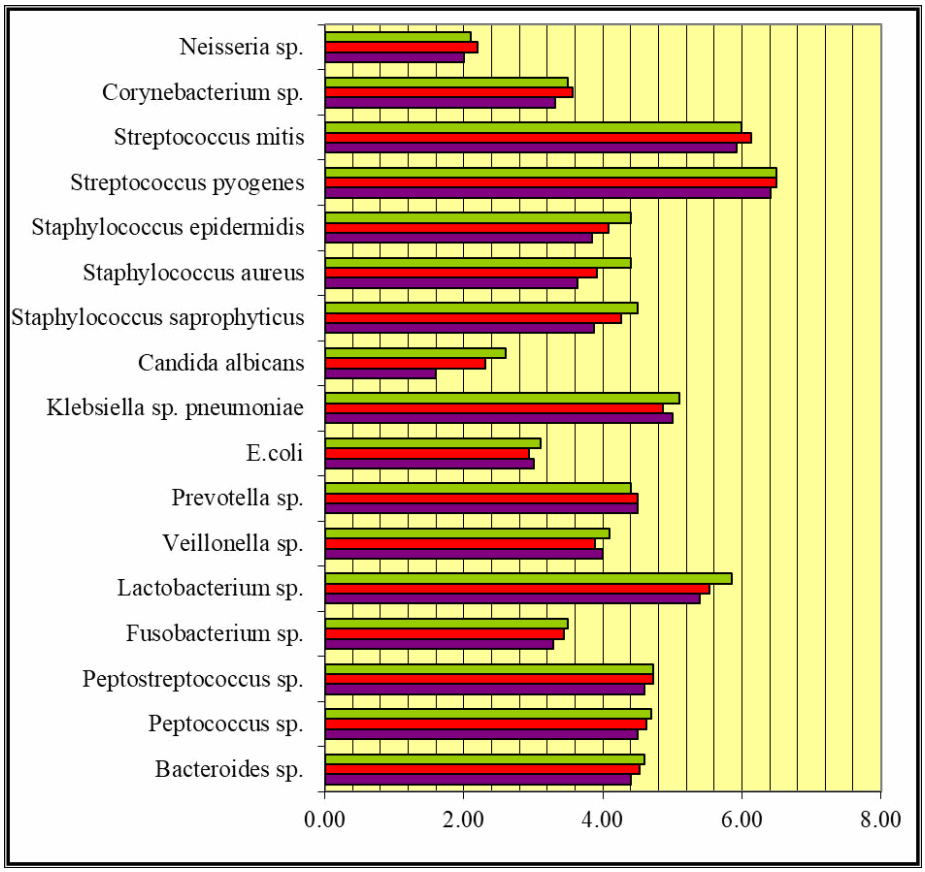

Figure 1. *The structure of microbiocenosis (lgCFU/ml) of acrylic bases of complete removable plastic prostheses at different stages of clinical operation.*

It should also be noted that, unlike the second period, after 14 days in the washes pathogenic was detected against the background of the growth of aerobic and microbiota (saprophytic, fungal and lactobacilli), which demonstrates the need to monitor the effectiveness after 30 days. The analysis of bacterial contamination of levels and features of accumulation of microflora by acrylic base in the course of clinical use of fixing cream led to the implementation of the next stage - comparative assessment of decontamination modes.

We have made a comparative analysis of the dynamics of bacterial contamination under the influence of different modes of decontamination (Table 2 and Figure 2). This allowed us to determine that the mode "A" slightly affects the species composition of the microbiota of CRPD bases, although it significantly ($p < 0.05$) reduces the quantitative indicators of microbial contamination. Thus, when using mode "A", the number of species decreased from an average of 13.3 to 9.9 (the qualitative indicator of bacterial contamination reduction is 60.4%).

The overall rate of final (after decontamination in mode "A") bacterial contamination of bases of CRPD was significantly ($p<0.05$) lower than before decontamination and was (12.6 ± 0.4) lgCFU/ml, respectively, against (31.0 ± 6.0) lgCFU/ml; a decrease in bacterial contamination of aerobic forms of microbiota was observed (their specific gravity was 36.2%).

The decontamination of acrylic bases of CRPD should be considered mode "B" as more effective because of the significant decrease in the species composition of the microbiota (the

Table 2. *Microbiocenosis (lgCFU/ml) and species composition of bacterial contamination of acrylic bases complete removable plastic prostheses under different decontamination modes.*

Microbiota			**Bacterial contamination acrylic bases**		
			to disinfection (n=30)	**under different modes decontamination**	
				mode «A» (n=30)	**mode «B» (n=30)**
Anaerobes	Bacteroides sp.		4,60±0,20	2,15±0,18	1,44±0,12*
	Peptococcus sp.		4,70±0,30	2,53±0,21	1,69±0,14*
	Peptostreptococcus sp.		4,73±0,37	2,29±0,19	1,38±0,12*
	Fusobacterium sp.		3,50±0,24	2,00±0,11	1,25±0,11
	Lactobacterium sp.		5,86±0,08	2,46±0,18	1,55±0,12*
	Veillonella sp.		4,10±0,20	1,89±0,16	1,43±0,18
	Prevotella sp.		4,40±0,20	2,17±0,15	1,33±0,11*
	E.coli		3,10±0,2	2,25±0,17	1,56±0,12*
	Klebsiella sp.		5,10±0,19	2,00±0,23	1,63±0,17
	Candida albicans		2,60±0,10	2,44±0,12	1,36±0,12*
Aerobes	Staphylococcus Saprophyticus		4,50±0,10	2,00±0,15	1,33±0,11
	Staphylococcus Aureus		4,40±0,10	2,00±0,12	1,14±0,09
	Staphylococcus Epidermidis		4,40±0,20	1,55±0,16	1,20±0,10
	Streptococcus Pyogenes		6,50±0,35	1,75±0,14	1,22±0,10*
	Streptococcus Mitis		6,00±0,30	2,27±0,25	1,43±0,12*
	Corynebacterium sp.		3,50±0,20	1,86±0,16	1,40±0,13*
	Neisseria sp.		2,10±0,20	1,20±0,10	1,00±0,01
Aerobic microorganisms		abs,CFU/ml	31,0±0,6	12,6±0,4	8,7±0,3*
		%	42,1	36,2	37,4
Anaerobic microorganisms		abs,CFU/ml	42,7±0,3	22,2±0,9	14,6±0,6*
		%	57,9	63,8	62,6
Total		abs,CFU/ml	73,7±2,6	34,8±1,7	23,3±0,9*
		%	100,0	100,0	100,0

*Note: * p <0.05 when compared to mode "A"*

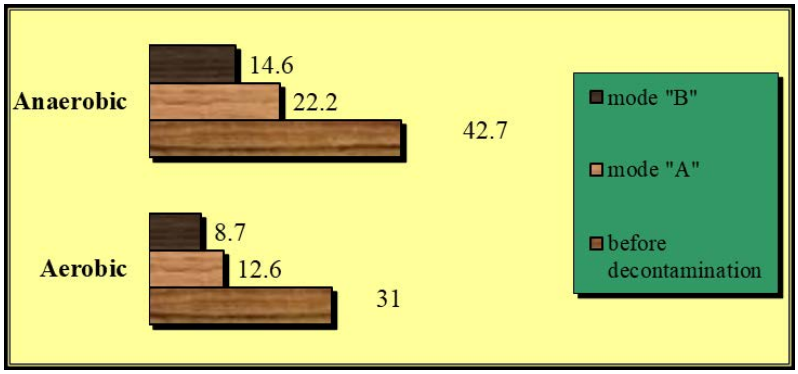

Figure 2. *Effectiveness of decontamination of acrylic bases complete removable plastic prostheses, depending on the decontamination modes.*

qualitative indicator of reduction of microbial contamination was 72.0%).

Conclusions.

The bacterial contamination of acrylic bases CRPD was investigated. It was found that the permanent microbiota of the surfaces of CRPD acrylic is characterized by individual features: the presence of aerobic and anaerobic species, and changes of its qualitative and quantitative composition at the stages of orthopedic treatment. Comparative assessment of bacterial contamination of bases proves that their surface after 14 days is characterized by an increase in bacterial contamination due to Candida albicans - before treatment 1.6 ± 0.1, after 14 days - 2.3 ± 0.1, after 30 days – 2.6 ± 0.1 CFU; $p<0.05$).

The total number of microorganisms in one patient during clinical operation of CRPD ranged from (13.2 ± 04) to (13.3 ± 0.4), i.e., did not change significantly ($p> 0.05$), which indicates in favor of the persistence of microbiocenosis of the oral cavity.

The modes of decontamination of CRPD have been investigated. We have studied the change in the quantitative and specific composition of the microbiota of CRPD acrylic bases under different modes ("A", "B") of decontamination. Patients in group "A" used the Sideex solution - a two-component system consisting of a liquid component (glutaraldehyde solution) and a powdery activator, mixed before use to obtain a working activated solution. The liquid component is a clear, colorless solution with a specific odor, which is a 2.2 - 2.7% aqueous solution of glutaraldehyde, which is an active ingredient, pH = 3.0 - 4.5. Powdery activator is a pale-yellow powder containing alkaline components, a corrosion inhibitor, and a dye. The activated working solution is a fluorescent green solution with a specific odor and containing 2.2 - 2.7% glutaraldehyde: pH = 8.2 - 9.2. (Great Britain). Preparation of the activated solution: a powder-activator is added to the container containing the liquid component (avoiding losses). Cleaning is carried out by the method of full immersion of the prosthesis in solution, with a thickness of the drug over it not less than 1 cm. The dentures are soused in solution for 15 minutes, then thorough washing in the same solution for 1-3 minutes. Sideex activated solution is used for sterilization and disinfection of metal, glass, polymeric (plastic, rubber, etc.) medical products. The dentures of patients from group "B" are decontaminated with 0.2% solution of chlorhexidine bigluconate. The dentures were placed in the solution overnight for 14 days, changing the solution every two days.

This allowed us to determine that the mode "A" slightly affects the species composition of the microbiota of CRPD bases, although it significantly ($p<0.05$) reduced the quantitative indicators of microbial contamination. The decontamination mode of acrylic bases of CRPD should be considered more effective because of the significant decrease in the species composition of the microbiota (the qualitative indicator of reduction of microbial contamination was 72.0%).

It was proved that the number of individual microorganisms in smears from acrylic bases after 14 days of clinical use of CRPD significantly ($p<0.05$) increased. Thus, Candida albicans increased from 1.60 ± 0.11 lgCFU/ml to 2.31 ± 0.11 lgCFU/ml; Staphylococcus Saprophyticus - from 3.87 ± 0.08 lgCFU/ml to 4.27 ± 0.11 lgCFU/ml, demonstrating the need to monitor efficacy after 30 days.

It is substantiated that decontamination of acrylic bases of CRPD with mode "A" has a small effect on the species composition of the microbiota, although it significantly ($p<0.05$) reduces quantitative indicators of microbial contamination. Regarding "B" mode, the species composition of aerobes from 31 lgCFU/ml to 8.7 lgCFU/ml and anaerobes from 42.7 lgCFU/ml to 14.6 lgCFU/ml was considered more effective.

Research development.

The research was performed in accordance with the comprehensive plan of Kharkov National Medical University of the Ministry of Health of Ukraine and within the research development of the departments of dental profile "Optimization of methods of diagnostics and treatment of common dental diseases" - registration number 0119U002899.

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