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COMPARATIVE ANALYSIS OF ADHESION OF ORAL MICROORGANISMS TO THE SURFACE OF FILLING MATERIALS

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Abstract:

This article provides an overview of the current issues of the interaction of filling materials with the microflora of the oral cavity. An increase in the efficiency of restoration of dental hard tissues and the prevention of secondary caries, periodontal diseases by optimizing the choice of filling materials is considered, and the mechanism of adhesion of oral microorganisms to filling materials will also be studied.

Purpose. Study of the properties of composite filling materials in order to compare their ability to attach strains of various microorganisms contained in the oral cavity**.**

Materials and research methods. For the purpose of researching the topic, I will conduct a comprehensive medical and social examination of persons with restorations from various filling materials.

Research results. Study of adhesion of cariogenic microorganisms of the oral cavity on Estelite composites (Estelite LV Low Flow, Estelite Flow Quick, Estelite LV High Flow). Obtaining information on the effect of the organic matrix, the filling of composites on the adhesion ability of cariogenic microorganisms.

Keywords: dental materials, adhesion, bacterial contamination

INTRODUCTION.

Today, the practice of a dentist involves the use of a wide range of filling materials, various in both chemical composition and properties. Recent studies have shown that filling materials differ significantly in their ability to adhere various types of oral microorganisms to their surface. In this regard, the problem of the attachment of oral microorganisms to dental fillings is urgent, since their high spread can significantly reduce the effectiveness of local anti-inflammatory therapy, cause recurrence of caries and inflammatory diseases of the oral cavity [1,3,5,8,10,13,15,19,24].

The adhesion factor of the restoration material is mainly related to the structure of its surface. The surface tension of the filling material used is also important. The quantitative and species composition of microorganisms on the surface of various filling materials varies significantly depending on the composition of the material. When using composite filling materials, bacterial contamination is 8-9 times less than on cement fillings. When choosing a material for certain interventions, it is necessary to take into account the degree of adhesive ability of the resident microflora of the oral cavity to dental materials. [2,5,9,11,13,15,19,23].The quantitative and qualitative composition of dental plaque on the surface of the fillings depends on the nature and quality of the filling material. As special studies show, the microflora on cements is most richly represented. The average level of colonization is typical for macrocomposite filling materials. Finally, dental plaque is poorly formed on microcomposite materials due to the low affinity of bacteria. Usually, only microaerophilic streptococci and actinomycetes in small quantities are determined in the composition of the plaque on microcomposite fillings. The data obtained will make it possible to predict possible complications when using a filling material with high adhesion rates of cariogenic and periodontopathogenic microorganisms in patients with obvious disorders of the oral microbiocenosis. The information obtained will contribute to an individual approach to the treatment of dental caries, a rational

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choice of filling material, taking into account the microbial flora of the oral cavity. [4,6,13,15,17,20].
An important factor in the adhesion of microorganisms to the surface of the filling material and enamel is the presence of saliva, which stimulates this adhesion, which contributes to the development of caries [6,9,13,19]. Moreover, the concentration of saliva glycoproteins positively correlates with the adhesion of S. mutans to the enamel and dental filling surfaces, that is, the higher the concentration of saliva glycoproteins, the higher the probability of S. mutans adhesion. [4,6,8,10,12,15,17,19].

THE AIM OF THIS STUDY is to study the effect of the composition of the organic matrix and the filling of composite filling materials on the adhesive activity of the pathogenic microflora of the oral cavity. Based on the data of laboratory and clinical studies, develop recommendations for the use of various filling materials, taking into account their possible effect on the microbiocenosis of the oral cavity**.**

MATERIALS AND RESEARCH METHODS. A group of patients with restorations made of various filling materials was examined. Clinical and dental method, as well as laboratory research method.

RESEARCH RESULTS. The adhesion of cariogenic microorganisms of the oral cavity on Estelite composites was studied. (Estelite LV Low Flow, Estelite Flow Quick, Estelite LV High Flow). Information has been obtained on the effect of the organic matrix, the filling of the composites on the adhesion capacity of cariogenic microorganisms. It was found that materials with the highest percentage of filling by weight "Estelite" (82.0%) and "Estelite FlowQtiick" (74.0%) have the least ability to adhere and accumulate cariogenic microorganisms on their surface. Materials "Estelite LV LowFlow", "Estelite LV High Flow" with a filling of 65.0% and 68.0%, respectively, demonstrated a higher frequency of detection and accumulation of cariogenic microorganisms on their surface. On the material containing UDMA in the organic matrix, the lowest indicators of the frequency of occurrence and colonization of cariogenic representatives of the oral microflora were revealed. The normalization of the local immune status of patients was established as a result of the inclusion of the studied composites and professional oral hygiene into the complex of measures for the rehabilitation of the oral cavity.

CONCLUSIONS:

1. The composition of the organic matrix affects the ability of composites to adhere and accumulate microorganisms on their surface. The material containing UDMA in the organic matrix revealed the lowest prevalence and colonization rates of cariogenic representatives of the oral microflora, which indicates more pronounced resistance properties of UDMA in relation to cariogenic flora, in comparison with Bis-GMAНаполненность материалов по весу оказывает влияние на их способность адгезировать и накапливать на своей поверхности микроорганизмы.
2. Practical recommendations have been developed that allow the selection of composite materials taking into account their material science characteristics and the ability to adhere microorganisms to their surface.
3. When restoring teeth with composites, in addition to the functional and aesthetic properties of composites, it is necessary to take into account the level of oral hygiene of patients.

LITERATURE

1. Khabibova N.N., Khabilov N.L. Assessment of vascular tissue disorders and regional blood flow in chronic recurrent aphthous stomatitis // New day in medicine. - 2019. – 3 (27). – pp. 262-266.
2. Khabibova N.N. Dynamic assessment of the dental status of patients with recurrent aphthous stomatitis // Medical news. - 2019. - No. 11. – pp. 65-67.
3. Khabibova N.N. Clinical and biochemical features of the course of pseudoallergic variants of chronic recurrent aphthous stomatitis // Problems of biology and medicine. – 2018. - No. 4 (104). – pp. 220-222.
4. Shirinova H.H., Khabibova N.N. Tana vaznining ortishi periodont tukimasi kasalliklari rivozhlanishiga tasir kiluvchi omil sifatida // Tibbiyotda Yangi kun, 2020. No. 2. B. 463-465

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
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5. Shirinova H.H. Comparative analysis of the clinical effectiveness of various methods of treating patients with generalized periodontitis of moderate severity // "New Day in Medicine" Scientific, abstract, cultural and educational journal. -2017. - No. 1 (17). – P. 100-103.Ширинова Ҳ.Ҳ. Умумий пародонтит инновацион давосини патогенетик асослаш// Тиббиётда янги кун. - 2019. - № 2 (26). – Б. 334-336.
6. Shirinova H.H. Periodont tuqimasida ortikcha tana vazn ta'sirida yuzaga keladigan ўzgarishlar va ularning asoratlarini oldini olish yўllarini ўrganish algorithms. - 2020. 04 May. - DGU No. 08260.
7. Taylakova D.I, KamilovKh.P, Kasymov M.M. The prevalence of systemic hypoplasia in children depending on the adverse environmental conditions and their prevention / INTERNATIONAL JOURNAL FOR SOCIAL STUDIES. – 2019. - Vol 5 (4) - P. 25-33.
8. Taylakova D.I, KamilovKh.P. The influence of some environmental pollutants on the histogenesis of teeth in experimental rats EUROPEN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH. – 2018. - Vol. 5 (11). - P. 255-258.
9. Taylakova D.I, KamilovKh.P. Hypoplasia In Children Of The Bukhara Region And Measures For Their Prevention / 4TH INTERNATIONAL EDUINDEX MULTIDISCIPLINARY CONFERENCE. – 2019. - P. 39-43.
10. Khabibova N.N. Characteristic features of free-radical processes and antioxidant protection in the oral cavity during chronic recurrent aphthous stomatitis// European Science Review. - 2018. - P. 191-193.
11. Khabibova N.N. Changes in biochemical and immunological indicators mixed saliva of patients with chronic recurrent aphthous stomatitis// European journal of pharmaceutical and medical research. –2018. – (5) 11. – P. 143-145.
12. Khabibova N.N., Khadjimetov A.A. Some occurrence aspects of chronic recurrent aphthous stomatitis of the oral cavity// Global Journal of Medical, Physical and Health Education. – 2019. - Vol. 7 (3). - P. 284-286.
13. Khabibova N.N. Characteristic features of the biochemical indicators of mixed saliva in patients with chronic recurrent aphtosis stomatitis// Global Science Research Journals. - 2019. - Vol. 7 (8). – P. 521-526
14. Khabibova N.N. The importance of adhesive molecules in the development of aftosis stomatitis// New day in medicine. - 2019. – № 4. – P. 45-50.
15. Khabibova N.N., Akhmadaliev N.N. Diagnosis and prognosis of chronic recurrent aphthous stomatitis// 4th international eduindex multidiciplinary conference 2019. Special issue Europen Journal of Business and socal Scieences. - 2019. June. – P. 52.
16. Khabibova N.N. Local humoral factors of the immune protection in patients with CHRAS// International scientific review. XII international correspondence scientific and practical conference «International scientific review of the problems and prospects of modern science and education». Russian impact factor 0,25. - 2019. - № 1 (41). - P. 39-41.
17. Shirinova H.H., Khabibova N.N. Comparative analysis of the clinical efficacy of various methods of complex treatment of chronic generalized periodontitis in overweight patients. //Journal For Innovative Development in Pharmaceutical and Technical Science.- Volume:4, Issue:3, Mar:2021.- P. 43-46.
18. Sobirov Sh. S. The specifics of the course of lichen planus in the oral mucosa// Journal For Innovative Development in Pharmaceutical and Technical Science (JIDPTS). Volume:4, Issue:3, Mar:2021 - P. 22-27
19. Taylakova D.I., Vokhidov U.G. Prevalence and Prevention of Fluorosis in Children Living in the Districts of the Bukhara Region// Annals of the Romanian Society for Cell Biology.-2021. –P. 6982 – 6989.
20. Kurbonova N.I., Xabibova N.N. The results of the working conditions of workers in the silk industry//Journal For Innovative Development

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-31, February 2024
ISSN: 2749-3644

in Pharmaceutical and Technical Science.- Volume:4, Issue:3, Mar:2021.- P. 35-37.

21. Kurbonova N.I. Optimization of prevention of dental morbidity in workers of the production of cholomatic production//Journal For Innovative Development in Pharmaceutical and Technical Science.- Volume:4, Issue:3, Mar:2021.- P. 15-17.
22. Qurbonova N.I., Khabibova N.N., Ikhtiyarova G.A. Hygienic Condition Of The Oral Cavity And The Level Of Hygienic Knowledge Of Silk Motor Workers// European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 3, Pages 3027-3033