

# EVALUATION OF THE EFFICACY OF THE ANTISEPTIC DRUG FARGALS AND 1% BENZKETOZONE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS WITH PARTIALLY REMOVABLE ORTHOPEDIC CONSTRUCTIONS

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## Abstract

Pathological changes in the oral cavity contribute to the development of various dental diseases. An increase in the incidence of periodontal diseases and dental caries lesions is the reason for the increased number of patients with diabetes mellitus seeking dental care. According to R. I. Runge (2014), 53.7% of patients with diabetes mellitus need orthopedic dental treatment. Dentures, even for patients without general somatic pathologies, have a number of side effects. Partially removable dentures have the greatest impact on the organs and tissues of the oral cavity. Impaired microcirculation of the tissues of the prosthetic bed, the function of salivation and factors of local immunity of the oral cavity contribute to the formation of dental plaque, which entails a change in the microflora of the oral cavity both quantitatively and qualitatively.

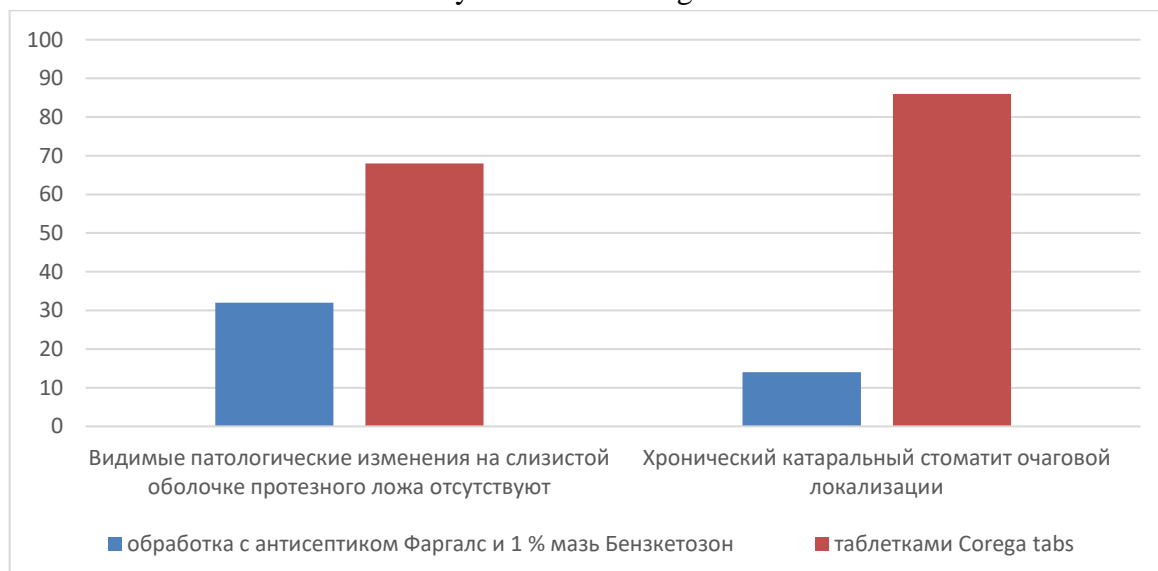
**Keywords:** dentoalveolar system, metabolic syndrome, microangiopathy, periodontal status, gingival margin, hypersalivation, oral fluid.

## Introduction

Clinical and microbiological comparative characteristics of the use of the antiseptic drug Fargals and 1% Benzketozone in patients with type 2 diabetes mellitus in relation to partially removable dentures of patients were carried out. For this purpose, we randomly selected 20 patients using partially removable dentures, comparable in gender, age, type and time of use of the partially removable prosthesis. Of these, 10 patients used the antiseptic drug Fargals and 1% Benzketozone as a method of hygienic care for partially removable dentures. 10 patients in the comparison group used antiseptic soluble tablets Corega tabs for this purpose. In order to obtain reliable information and the possibility of an objective assessment of significant indicators, all the examined were offered the use of the selected method of hygienic care for 1 week once a day. The method of application of antiseptic soluble tablets Corega tabs is known: 1 tablet was dissolved in 150 ml of warm running water, the prosthesis was placed in the obtained antiseptic solution for 15 minutes once a day. At the end of the allotted time, the prosthesis was removed from the solution, rinsed abundantly under warm running water and used for its intended purpose. Preliminarily, all the



examined patients were determined by the one-time effectiveness of each recommended method of hygienic care for partially removable dentures by calculating the reduction of prosthetic contamination according to the method of S. B. Ulitovsky and A. A. Leontiev (2008). In the observed patients, prior to the application of the recommended methods of hygienic care for partially removable dentures, the cleanliness index of the prosthesis 126 developed by S. B. Ulitovsky and A. A. Leontiev (2008) was at the level of "very poor". The values of this indicator have changed significantly after a single application of the selected methods of hygienic care. The use of the antiseptic drug Fargals and 1% Benzketozone led to the values of the prosthesis cleanliness index according to the method of S. B. Ulitovsky and A. A. Leontiev (2008) of 2.8-3.0 and 3.2-3.5 for antiseptic soluble tablets Corega tabs. Therefore, the contamination reduction index of partially removable dentures with the use of the antiseptic preparation Fargals and 1% Benzketozone was 45.5-49.0%, which indicates a good degree of cleaning of removable dentures, and 36.4-41.8% for antiseptic dissolvable tablets Corega tabs - "a satisfactory degree of cleaning of the prosthesis". During the examination of patients, it was found that after 1 week of application of the selected methods of hygienic care for partially removable dentures, the index of cleanliness of the prosthesis developed by S. B. Ulitovsky and A. A. Leontiev (2008) in persons who used the antiseptic drug Fargals and 1% Benzketozone was 2.0-2.5, which corresponds to a good level of hygiene. In patients who used Corega tabs antiseptic tablets, it was 3.0-3.5, which corresponds to a satisfactory level of hygiene. It should be noted that in all patients using the antiseptic drug Fargals and 1% Benzketozone for hygienic care of partially removable dentures, no visible pathological changes were detected on the mucous membrane after 1 week. In patients who used Corega tabs for hygienic care of partially removable dentures, only in 40% of cases there were no visible pathological changes on the mucous membrane of the prosthetic bed. In 60% of cases, chronic catarrhal stomatitis of focal localization was detected on the mucous membrane of the prosthetic bed. The results of the study are shown in Figure 1.



**Figure 1 – Results of the assessment of the condition of the mucous membrane of the prosthetic bed of patients depending on the method of hygienic care of partially removable dentures.**

To assess the effectiveness of the microbicidal effect of the use of the antiseptic drug Fargals and 1% Benzketozone, a single treatment of 18 removable dentures was performed.



**Table 1. Characteristics of the composition of microflora colonizing the inner and outer surfaces of partially removable dentures when using the antiseptic drug Fargals and 1% Benzketozone after 1 week, (% , M±m)**

| Microorganisms   | Composition of microflora located on the inner surface of a removable denture with Fargals and 1% Benzketozone (n=18) |             | Composition of microflora located on the outer surface of the prosthesis treated with Fargals and 1% Benzketozone (n=18) |                  |
|--|---|-------------|--|------------------|
|  | Percentage of occurrence  | lg CFU/swab | Percentage of occurrence   | lg CFU/swab      |
| Enterobacteriaceae family                                    | 88,90%  | 4.25±0.32   | 0,00%  | <b>0.00±0.00</b> |
| Including Klebsiella spp.                                    | 11,10%  | 5.00±0.00   | 0,00%  | <b>0.00±0.00</b> |
| Enterococcus spp.  | 94,40%  | 4.50±0.50   | 0,00%  | <b>0.00±0.00</b> |
| S. aureus  | 5,60%   | 4.00±0.00   | 0,00%  | <b>0.00±0.00</b> |
| S. saprophyticus   | 88,90%  | 4.80±0.49   | 0,00%  | <b>0.00±0.00</b> |
| P. aeruginosa  | 33,30%  | 4.83±0.31   | 0,00%  | <b>0.00±0.00</b> |
| Candida albicans   | 44,40%  | 4.38±0.18   | 0,00%  | <b>0.00±0.00</b> |
| Candida crossroads   | 5,60%   | 4.00±0.00   | 0,00%  | <b>0.00±0.00</b> |
| Note: bold - statistically significant differences at p≤0.05 |   |             |  |                  |

Based on the results of the study, it can be concluded that this method has an absolute microbicidal effect. At the end of 1 week of use of the method of hygienic care for partially removable dentures selected for each group, biological material was collected to determine the composition of the microflora colonizing the inner surface of the removable prosthetic structure. As a result of the research, it was found that when using the antiseptic drug Fargals and 1% Benzketozone, the inner surface of partially removable dentures was colonized by such microorganisms as:  $\alpha$  hemolytic Streptococcus and Staphylococcus spp. to a degree not exceeding lg 4.88±0.30 129 CFU/tampon. It should be noted that when patients used antiseptic soluble tablets Corega tabs as a method of hygienic care for partially removable dentures, a greater species composition of microorganisms such as  $\alpha$  hemolytic Streptococcus, Enterococcus spp., Candida albicans, Candida of other species, Lactobacellus spp. and Staphylococcus spp. was found on the inner surface of prostheses to a degree exceeding lg 5.33±0.88 CFU/tampon. The results of the study are presented in Table 2.

**Table 2. Characteristics of the composition of microflora colonizing the inner surface of partially removable dentures with the use of the antiseptic drug Fargals and 1% Benzketozone and antiseptic soluble tablets Corega tabs after 1 week, (% , M±m)**

| Microorganisms                   | antiseptic drug Fargals and 1% Benzketozone (n=10) |             | Antiseptic Soluble tablets Corega tabs (n=10) |                  |
|----------------------------------|--|-------------|---|------------------|
|                                  | Percentage of occurrence                           | lg CFU/swab | Percentage of occurrence                      | lg CFU/swab      |
| $\alpha$ hemolytic Streptococcus | 80,00%   | 4.88±0.30   | 50,00%  | <b>5.00±0.32</b> |
| Enterococcus spp.                | 0,00%  | 0.00±0.00   | 30,00%  | <b>4.00±0.00</b> |
| Candida albicans                 | 0,00%  | 0.00±0.00   | 30,00%  | <b>4.00±0.00</b> |
| Candida Others                   | 0,00%  | 0.00±0.00   | 10,00%  | <b>4.00±0.00</b> |



|   |        |                         |         |                  |
|---|--------|-------------------------|---------|------------------|
| Views   |        |                         |         |                  |
| Lactobacellus spp.  | 0,00%  | 0.00±0.00               | 30,00%  | <b>5.33±0.88</b> |
| Staphilococcus spp  | 90,00% | 4.44±0.18<br>p3-5=0,026 | 100,00% | <b>5.30±0.33</b> |
| <b>Note: bold</b> - statistically significant differences at p≤0.05 |        |                         |         |                  |

As a result of the research, it can be concluded that when 130 patients used the antiseptic drug Fargals and 1% Benzketozone for hygienic care of partially removable dentures, the composition of microorganisms colonizing the inner surface of removable orthopedic structures is statistically significantly different from the microflora determined on the inner surface of removable dentures when using antiseptic soluble tablets Corega tabs. Thus, the physical method of hygienic cleaning of partially removable dentures based on the antiseptic preparation Fargals and 1% Benzketozone contributes to the better elimination of opportunistic pathogenic flora colonizing partially removable orthopedic structures.

### References

1. Newman, J.H. (1996). The Idea of a University. Yale University Press.
2. Maers M. R-D-L me this: A simple semi-directed learning approach to teaching first year physics students. The University of Sheffield,
3. Raelin, J.A. (2008) Work-Based Learning: Bridging Knowledge and Action in the Workplace. San Francisco, CA: Jossey-Bass.
4. Trow, M. (1974) "Problems in the transition from elite to mass higher education" from OECD, Policies for higher education. Paris: Organisation for Economic Co-operation and Development (OECD).
5. Gibbs, P. (2010) Higher Education as a Market: A problem or solution? Studies in Higher Education 26, 85-94.
6. Smith, H. (2008) Spoon-feeding: or how I learned to stop worrying and love the mess. Teaching in Higher Education 13, 715-718.
7. Cole, N.S. (1990) Conceptions of Education Achievement. Educational Researcher 19, 2-7.
8. Dadabaeva M.U., Mirxusanova R.S, Shokirov. F.Z., Khojimurodov J.E. (2020) Comparative analysis of mechanical properties of fiber reinforcing systems for adhesive splinting. Journal of research in health science №4 pp 103-106.
9. Dadabayeva M. U. et al. Changes in the oral cavity in patients with chronic kidney disease //Current approaches and research of the XXI century–2020. Editura “Liceul. – 2020. – C. 68-71.
10. Dadabayeva M.U., etc. STOMATISM OF THE STOMATOLOGICAL CULTURE OF THE U.S.A. – 2020. – №. 1. - S. 15-19.
11. Dadabayeva M. et al. Stomatiya // Stomatologiya. – 2020. - T. 1. – №. 1 (78). - S. 15-19.
12. Khabilov N. L. et al. Influence of removable lamellar prostheses on the microbiocenosis of the oral cavity. – 2016. – T. 6. – №. 12. P. 82-5.
13. Dadabayeva M. U. et al. Changes in the oral cavity in patients with chronic kidney disease //Current approaches and research of the XXI century–2020. Editura “Liceul. – 2020. – C. 68-71.



14. DADABAEVA M. U. et al. INFLUENCE OF GENERAL SOMATIC DISEASES ON THE STATE OF ORAL CAVITY ORGANS (literature review) // JOURNAL OF BIOMEDICINE AND PRACTICE. – 2021. – T. 6. – №. 1.
15. Normuradova R. Z., Dadabaeva M. U., Niazov M. K. Z. DYNAMICS OF CHANGE OF INDICATORS OF FIRMNESS OF CAPILLARIES OF THE MUCOUS MEMBRANE OF THE PROSTHETIC BED AT PATIENTS WITH DIABETES //INTERNATIONAL SCIENTIFIC REVIEW OF THE PROBLEMS AND PROSPECTS OF MODERN SCIENCE AND EDUCATION. – 2018. – C. 144-147.
16. Ganiev U., Akbarov A., Dadabaeva M. Temporary removable prostheses after dental implantation. – 2016. – T. 1. – №. 2-3 (63-64). P. 33-36.
17. Khabilov N., Safarov M., Dadabaeva M. Problems of dental prosthetics in patients with diabetes mellitus. – 2016. – T. 1. – №. 2-3 (63-64). P. 140-148.
18. Pulatov B., Alieva N., Dadabaeva M. Sovremennye metody monitoringa osteointegratsii [Modern methods of monitoring osteointegration]. – 2021. – T. 1. – №. 1. P. 45-49.
19. Dadabayeva M. U. et al. Changes in the oral cavity in patients with chronic kidney disease //Current approaches and research of the XXI century–2020. Editura “Liceul. – 2020. – C. 68-71.
20. Khabilov N.L.et al. HOSPITAL DEPARTMENT OF ORTHOPAEDIC DENTISTRY YIL DAVOMIDA THESIS OF ETIHAS // Conferences. – 2023. - S. 114-118.

