COMPREHENSIVE ASSESSMENT OF ORAL MICROBIOTA IN PEDIATRIC PATIENTS WITH PERIODONTAL INFLAMMATORY DISORDERS

Sobirov Alijon Axmadovich
Center for the Development of Professional Qualification of Medical Workers,
Tashkent, Uzbekistan. IN: 100007
alijonsobirov204@gmail.com,
https://orcid.org/0009-0002-0296-7867

Relevance

It is known that the oral cavity serves as a favorable environment for the proliferation and biological activity of numerous microorganisms [1-3]. In this context, along with the positive symbiotic interactions with the soft tissues of the periodontal complex, the negative effects of representatives of the normal microflora are also observed [4-6].

The Aim of the Study

To determine the frequency of occurrence and etiopathogenetic significance of key microbiota present in the oral cavity among healthy individuals (control group - CG) and patients with various forms of periodontitis.

Materials and Methods

In the study, a targeted main group (MG-1) consisting of 112 patients with periodontitis and a control group (CG - Group II) of 40 healthy individuals aged 30-55 underwent comprehensive examinations to assess the condition of the oral cavity (OC). During patient evaluations, key clinical criteria for periodontal tissue (PT) assessment included hyperemia, swelling, hygiene status, coloration of the oral mucosa (OM), and other visual indicators of periodontal complex pathology. These parameters were assessed using traditional methods and included indices such as the Gingival Index (GI), Papillary-Marginal-Attached Index (PMA), Periodontal Index (PI), and Community Periodontal Index of Treatment Needs (CPITN).

Results and its Discussion

The results show that pathogenic obligate anaerobes were more frequently isolated from group MG-1, with representatives of Porphyromonas gingivalis (58%/65%), Actinobacillus actinomycetemcomitans/Aggregatibacter actinomycetemcomitans (56%/63%), Fusobacterium nucleatum (24%/27%), Prevotella spp. (26%/29%), and Peptostreptococcus spp. (23%/26%). A large proportion of Peptostreptococcus micros were found to be associated with this group. On the other hand, Peptostreptococcus spp. (46%/18%), Veillonella spp. (18%/7%), and Actinomyces spp. (13%/5%) were more prevalent in the healthy individuals (CG) group. Additionally, among the obligate anaerobes, P. gingivalis and T. denticola, both with aggressive properties, were identified as playing an active role in periodontal bleeding and tissue destruction.

Conclusions

The use of both classic and molecular-genetic methods enhances the diagnostic accuracy of identifying the mixed microbial composition of periodontal pocket microorganisms, revealing individual differences in the frequency of microorganism encounters. In this case, combining these two methods in laboratory practice provides the opportunity to gather regional data on major pathogens.

Keywords: Anaerobic and aerobic microbes, Oral microflora, Periodontitis, Periodontogenic microorganisms.

References

1. Одилжонов ЖД, Собиров АА, Нурматова НТ. Парадонтитнинг Этиологияси, Диагностикаси, Клиникаси Ва Даволаш Усуллари Тугрисида Тадкикотлар Тахлили. Excellencia: International Multi-disciplinary Journal of Education, 2 (4), 499-505.
2. Нурматова НТ, Гаффоров СА. Анализ микробиоты слизистой ротовой полости у детей и подростков с хроническими формами гингивитов. Sciences of Europe, 149, 20-26. https://doi.org/10.5281/zenodo.13842678

3. Axmadovich, S. A., Amrulloevich, G. S., Tukhtakhujaevna, N. N., Sotvoldievich, D. R., Xaldarovna, Y. F., Matlubovich, R. N., ... & Nusratovich, I. F. (2025). Clinical-functional and immune-microbiological features of the oral cavity in children and adolescents with chronic forms of gingivitis. Edelweiss Applied Science and Technology, 9(5), 3371-3382. https://doi.org/10.55214/25768484.v9i5.7708
4. Akhrarova Sh., S. A. (2024). Biochemical characteristics of oral cavity pathology in children and adolescents with cerebral palsy. Sciences of Europe, 144, 32-39. https://doi.org/10.5281/zenodo.12739920
5. Shamsiyeva, M. O., Gafforov, S. A. (2024). Basing the formation of pathologies of the oral cavity in children and adolescents with cerebral palsy with the help of clinical and laboratory studies. Sciences of Europe, 144, 40-45. https://doi.org/10.5281/zenodo.12739930
6. Axmadovich, S. A., Amrulloyevich, G. S., Fakhriddin ogli, A. S., Sherali ogli, X. M., Sotvoldiyevich, D. R., Tuhtakhodjaevna, N. N., & Dilmurodjon ogli, O. J. (2025). Scientific and practical justification of alternative methods for using the phytopreparations Hemostat and Clove Essential Oil in the treatment of severe chronic generalized periodontitis. Edelweiss Applied Science and Technology, 9(7), 1737-1747. https://doi.org/10.55214/2576-8484.v9i7.9007