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Inflammatory Diseases of Periodontal Tissues in The Elderly and Senile

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ANNOTATION

Functional disorders of the dental system caused by tooth loss from periodontal diseases develop 5 times more often than with complications of caries. Moreover, inflammatory periodontal diseases are complicated by psychological factors, and the problem becomes not only medical, but also social.

KEYWORDS

Inflammatory, Periodontal, Tissues, Senile.

RELEVANCE

Functional disorders of the dental system caused by tooth loss from periodontal diseases develop 5 times more often than with complications of caries. Moreover, inflammatory periodontal diseases are complicated by psychological factors, and the problem becomes not only medical, but also social. It is known that the development of periodontal diseases is determined by the complex interaction of the immune system and pathogens, overestimating the role of each of which can lead to biased conclusions. Since the activity of the disease in periodontitis is determined by the complex interaction between various parts of the immune system and periodontopathogens, a comprehensive study of Th1, Th2, Th17 immune responses will help explain the reason for the uncontrolled proliferation of pathogens that cause periodontitis, which leads to the emergence of an infectious and inflammatory process in the periodontal region. This knowledge is necessary for the development of immunomodulatory strategies in the treatment of periodontitis, as well as for maximum protection and minimization of periodontal tissue damage. Within the framework of the extended Th1/Th2/Th17 paradigm, it will probably be possible to explain what causes the protective or destructive reaction in the periodontal of individual cells, and then it will probably be possible to develop adequate therapeutic interventions that maximize the protective and minimize the destructive functions of T cells in periodontal diseases.

The purpose of the study. To study the immunological aspects of chronic generalized periodontitis in order to develop a personalized approach to treatment and assessment of the prognosis of the disease.

1. Immune senescence and innate immunity In the elderly, there is a decrease in the functional activity of neutrophils, macrophages, and dendritic cells. This leads to a weakening of antibacterial protection, a decrease in the production of antimicrobial peptides and a violation of phagocytosis. As a result, dysbiosis develops and the inflammatory response in periodontal tissues increases.
2. Adaptive immunity and cytokine imbalance Age-related changes also affect the adaptive immune system. A decrease in the number of regulatory T cells (Treg) and a predominance of the Th17 response lead to hyperproduction of IL-17, activation of osteoclasts, and accelerated bone resorption. This exacerbates the course of periodontitis and contributes to its transition to a chronic form.
3. Systemic inflammation and inflammaging The concept of inflammaging describes the presence of a persistent, mild inflammatory process characteristic of the elderly. Elevated levels of IL-6, TNF- α , and IL-1 β contribute to the destruction of periodontal soft and hard tissues, exacerbating the chronic course of the disease.

4. Clinical significance and therapeutic approaches Effective treatment of periodontitis in elderly patients requires consideration of the immunological status and concomitant pathology. Promising treatment methods are: - the use of immunomodulators (for example, thymogen, lycopene); - the use of probiotics to correct the microbiota; - therapy aimed at suppressing pro-inflammatory cytokines; - an integrated approach taking into account background diseases (diabetes mellitus, osteoporosis, etc.). Comprehensive examination of patients with periodontitis included clinical, index and X-ray examinations. When making a diagnosis, a classification was used based on the clinical form of the disease, with the definition of the severity of the course. This classification was adopted in 1983 at the 16th Plenum of the All-Union Dental Society in Yerevan. The Silnes and Loe method, the PMA index, the CPITN index, the Muhleman method modified by Cower, the Green Vermillion hygiene index, and the measurement of the depth of periodontal pockets using Williams probes were used to index the condition of periodontal tissues. The laws of parameter distribution were established using the Kolmogorov-Smirnov λ -test. If the hypothesis of a normal distribution is consistent, the variances were compared using Fischer's F-test. When the variances were equal, the Student's t-test was used to compare the averages, otherwise the Welch criterion. In case of contradiction to the hypothesis of a normal distribution, the average values were compared using the Wilcoxon-Man-Whitney U-statistic and the Van der Waerden X criterion. Correlation analysis was used to study the mechanisms of the parameter relationship. The Kendall rank correlation coefficient was calculated, which made it possible not to take into account the distribution law of the studied parameters. The obtained correlation coefficients were compared with zero to determine their significance and with each other to determine the differences (Lakin G.F., 1990; Kharlamov et al., 1994). The frequency of occurrence of signs was estimated using the "case-control" method with the calculation of the odds ratio (OR, odds ratio). 95% confidence intervals were calculated using the Fischer method (OR-CI95%).

Conclusion. Disorders of both innate and adaptive immunity, systemic inflammation and cytokine imbalance create conditions for the progressive destruction of periodontal tissues. Considering these features, it is necessary to develop individualized treatment strategies aimed at immunological correction and comprehensive management of concomitant diseases.

REFERENCES

1. Гусейнова С.Э. Возрастные особенности патогенеза хронического генерализованного

- пародонтита. *Стоматология*. 2014;93(5):45–49.
2. Кулагина И.Ю., Зорина О.А. Иммунные механизмы воспалительных заболеваний пародонта у лиц пожилого возраста. *Российский стоматологический журнал*. 2015;(3):22–27.
 3. Малкова Т.А., Мурашова Н.Н. Иммунный статус у пациентов с пародонтитом в возрасте 60+. *Стоматология*. 2016;(2):30–35.
 4. Nikolich-Žugich J. The twilight of immunity: emerging concepts in aging of the immune system. *Nat Immunol*. 2018;19:10–19.
 5. Franceschi C., Campisi J. Chronic inflammation (inflammaging) and its potential contribution to age-associated diseases. *J Gerontol A Biol Sci Med Sci*. 2014;69(Suppl 1):S4–S9.
 6. Hajishengallis G. Aging and its impact on innate immunity and inflammation: implications for periodontitis. *J Oral Biosci*. 2014;56(1):30–37.
 7. Fulop T., Larbi A., Pawelec G. Human T cell aging and the impact of persistent viral infections. *Front Immunol*. 2013;4:271.
 8. Page R.C., Kornman K.S. The pathogenesis of human periodontitis: an introduction. *Periodontol 2000*. 1997;14:9–11.
 9. Van Dyke T.E. Control of inflammation and periodontitis. *Periodontol 2000*. 2007;45:158–166.
 10. Slots J. Periodontitis: facts, fallacies and the future. *Periodontol 2000*. 2017;75(1):7–23.