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NEW METHODS OF RESEARCH OF PERIODONTAL DISEASES IN WOMEN

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ABOUT ARTICLE

Key words: Porphyromonas gingivalis, tannerella forsythia, Treponema denticola, Prevotella intermedia and Aggregatibacter actinomycetemcomitans.

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Abstract: Many studies have found that a decrease in the concentration of estrogen leads to osteoporosis of the bones of the skeleton, characterized by a decrease in bone mass and a decrease in its density, which may also be a risk factor for the progression of periodontal diseases. According to the results of the study, the most common dental disease among women during menopause is periodontitis, which, according to many studies, occurs in 80% of women. Periodontal diseases are the cause of most cases of tooth loss and are the focus of chronic infections that negatively affect physical health and quality of life in general.

INTRODUCTION

According to most researchers, the main role in the development of periodontology is assigned to microbial factors. The complex of periodontal bacteria found in periodontitis includes microorganisms such as Porphyromonas gingivalis, tannerella forsythia, Treponema denticola, Prevotella intermedia and Aggregatibacter actinomycetemcomitans. Qualitative analysis of these pathogens is especially important for the diagnosis and assessment of the risk of developing the disease. The most specific and sensitive method shown for this study is PCR (polymerase chain reaction).Despite the large complex of means used to improve the condition of oral tissues, treatment is not always successful. This is due to the fact that hormonal disorders are not taken into account during treatment, and this also affects the progression of dental diseases. According to some authors, the use of hormone replacement therapy in menopausal patients in order to reduce bone loss, prevent osteoporosis and improve the condition of teeth is an effective method of treating symptoms of menopause in the oral cavity. However, many researchers refute the positive effect of HRT on periodontal tissues and question the validity of

hormone replacement therapy for both preventive and therapeutic purposes. An urgent task of modern dentistry is the early detection, prevention and elimination of factors contributing to the imbalance of physiological processes in periodontal tissues in women during menopause. In this regard, the purpose of our scientific research is justified.

Definition and classification: Coding according to ICD-10N95.1 - Menopause and the state of menopause in women. Menopause is a physiological process in every woman's life. During this period, there is a gradual decrease, after which there is a complete cessation of ovarian function [3]. There are 4 periods of menopause: premenopausal, perimenopausal, perimenopausal and postmenopausal.

Perimenopause is the period of the greatest clinical manifestation, covering the period of time before menopause and 2 years after menopause.

Menopause is the complete cessation of menstruation for more than 12 months, and the date is set retroactively. This is a natural process associated with the depletion of a genetically determined follicular reserve. The diagnostic criteria of menopause are amenorrhea on the background of hypoestrogenemia (a decrease in the level of estradiol less than 30 pg /ml) and a high concentration of follicle-stimulating hormone in the blood (more than 40 IU/ l). There are early (up to 40 years), early (40-45 years), timely (46-54 years), late menopause (over 55 years).

postmenopause is the transition from menopause to the complete cessation of ovarian function, which lasts until the end of a woman's life (more than 30% of the female population is in the postmenopausal period). This period is characterized by an increase in the frequency of diseases associated with estrogen deficiency.

Etiology and etiological factor

Due to the increase in the life expectancy of women, much attention is paid to the postmenopausal period. This period accounts for 3/1 of a woman's life. At this time, in addition to age-related changes in the reproductive system, general degenerative processes occur in the female body. This is associated with complex neurohormonal disorders, including age-related disorders of the central nervous system, hypothalamus, pituitary gland, ovaries, adrenal cortex, thyroid gland and many other endocrine glands.

It was found that the age of onset of natural menopause depends on genetic factors related to the region of residence, ethnicity, socio-economic status, lifestyle and culture.

The early age of natural menopause was associated with a reduced risk of breast cancer, ovarian cancer and, conversely, an increased risk of cardiovascular diseases, atherosclerosis, stroke and osteoporosis. It was found that mortality from all causes decreases by 2% with each increase in the year of menopause. The risk of death in postmenopausal women is 2-3 times higher than in men of the same age.

A tendency to develop overweight after menopause has been revealed. This is due to the fact that overweight and obese women have high levels of estrogen, which can lead to a delay in the onset of menopause.

Most researchers believe that the disappearance of ovarian function is genetically programmed. Over the course of life, the number of follicles embedded in the ovary gradually decreases. Thus, the function of the hypothalamic-pituitary system changes for the second time, in response to a lack of estrogen. Due to the increased secretion of gonadotropins by the hypothalamus and pituitary gland, the synthesis of estrogen and progesterone gradually decreases in the process of complex functional and biochemical changes that lead to depletion of the follicular apparatus and resistance to stimulation by gonadotropins.

The production of inhibin, a blocker of follicle-stimulating hormone synthesis by the glandular pituitary gland, also decreases. All these changes eventually lead to a compensatory increase in the level of secretion of follicle-stimulating and luteinizing hormones by the glandular pituitary gland, which affects the course of menopause.

Estrogen deficiency plays a pathogenetic role in many diseases. It should be noted that the first changes in the cardiovascular, bone and central nervous systems begin already in the premenopausal period. During this period, the production of osteoclasts increases, the production of osteoblasts decreases, calcium absorption in the intestine decreases, vitamin D deficiency increases and bone resorption increases. Menopause is a period of occurrence of emotional disorders of varying severity, from a slight decrease in mood and anxiety to depression [150].The main symptoms and signs of menopause are divided into 2 groups: early and late. Early symptoms include hot flashes, sweating, depression, excitability, irritability, sleep disturbances, memory loss and dry mucous membranes. Late symptoms include metabolic disorders (fat deposition in the central part and abdominal cavity), cardiovascular system (atherosclerosis), skeletal muscles (accelerated osteopenia - osteoporosis, osteoporosis, increased risk of fractures, sarcopenia).

Materials and methods. We plan to study 35 women aged 60-75 years as subjects. The subject of this study is a clinical and laboratory assessment of the periodontal condition, as well as the state of bone density and blood circulation in periodontal tissues.

In this work, modern methods of collecting and processing materials are used, and the results obtained are subjected to statistical processing.

The diagnosis of periodontal diseases is based on clinical data and includes surveys, examination of patients, assessment of the condition of teeth and periodontal (measurement of the depth of periodontal pockets, bleeding gums, measurement of periodontal and sanitary indicators) and X-ray examination determining the level of the alveolar bone. However, traditional diagnostics does not allow identifying sensitive patients at risk of disease progression. As a result, it is necessary to establish effective markers indicating the progression of periodontitis.

Microscopic methods give a general characteristic of the microflora and do not allow us to determine whether bacteria belong to a particular species. The traditional microbiological method of studying periodontal diseases has a number of disadvantages, consisting in sowing microorganisms on a special nutrient medium with subsequent general and specific identification: it is limited to stating the irreversible process of tissue destruction, the duration of the study is 5-7 days, the need to use a certain nutrient medium and the creation of special conditions for their cultivation.Early detection of microorganisms, prevention of their spread to prevent inflammatory- destructive processes in periodontal tissues are an urgent task of modern dentistry. To date, the most accurate and modern diagnostic method is the molecular genetic method, in particular polymerase chain reaction (PCR), which makes it possible to achieve a significant increase in the small concentration of certain fragments of nucleic acids (DNA) in biological material.

The results of the study and their discussion. In accordance with the objectives of the study and the objectives of the study, all patients who participated in the study underwent a comprehensive examination, which included the collection of anamnesis, the study of the clinical and radiological condition of the oral cavity and periodontal tissues, as well as the study of the qualitative and quantitative composition of the microflora of the periodontal pocket. The clinical examination of the patient began with the collection of anamnesis. Special attention was paid to the genetic burden of periodontal diseases, assessment of the patient's general health, assessment of metastases and concomitant diseases, taking medications, identifying the presence of bad habits (smoking, abuse of carbohydrate foods, etc.)

During external examination of the patient, the composition of the face, skin color, red lip border were evaluated, palpation of local lymph nodes was performed. We also studied the condition of the temporomandibular joint, assessed the nature of the movement of the lower jaw, the presence of clicks and pain.

During the examination of the oral cavity, we assessed the location of the frenulum and umbilical cord, the depth of the vestibule, examined the tongue, palate and tonsils. The condition of the oral mucosa, its color and the degree of moisture were evaluated. Pathological changes of the mucous membrane were detected. When registering the dentition, caries, filled and removed teeth, the presence of splinting structures, removable and non-removable orthopedic structures were registered, an approximate assessment of the condition of periodontal tissues was carried out. They also drew attention to the presence of non-carious lesions of the teeth: erosions, wedge-shaped defects, pathological tooth erasure.According to the survey results, postmenopausal women taking HRT reported bad breath 60 times less often due to bleeding gums (40%, respectively) and dry mouth (17.1%) compared to women who did not take HRT (2.3%), and 17.1% of women taking HRT, reported bad breath, which is 42.9 times less than in women who did not take HRT (2.5%). No, but 5.7 times more than in the control group (3%). Postmenopausal women were 5.7 times more likely to notice a white plaque on the tongue (17.1% and 14.3%, respectively) than women in the control group (3%), regardless of whether they took HRT or not. A burning sensation in the oral cavity was noted by 5.7% of women in group II and 2.9% in group III.

Over the past 10 years, a woman's life expectancy has increased significantly, and, accordingly, most of it, that is, 1/3 of her life, falls on the period after menopause. Women's health is a universal health issue. The average age of menopause in our study in the group of women who did not take HRT was 50.97± 1.9, compared with 51.12± 1.8 in the group who took HRT, and VP is consistent with the data of Smetnik and co-authors.

The undesirable symptoms noted by patients during this period are due to the result of many systemic processes occurring in the female body, that is, the cessation of endocrinological activity of the ovaries.

It is known from the literature that the oral mucosa contains estrogen receptors, as a result hormonal changes affect the development and progression of dental diseases Estrogen deficiency affects the maturation of the epithelium of the oral mucosa, leads to its thinning and atrophy, thereby being more exposed to local mechanical damage due to atrophic changes in the oral mucosa in menopausal women,

salivation is observed, as well as candidiasis due to increased colonization by microorganisms, reduced patients develop diseases such as burning mouth syndrome, Wilson's lichen, idiopathic neuropathy.

Currently, the use of hormone replacement therapy in menopausal patients is aimed at reducing bone loss, preventing osteoporosis and improving the condition of teeth and is an effective way to treat the symptoms of menopause in the oral cavity.

In this regard, the purpose of our study is justified: to increase the effectiveness of dental treatment of women during menopause, based on the identification of the features of the condition of the teeth depending on the intake of hormone replacement therapy drugs.

Taking into account the urgency of the problems identified by the results of the analysis and systematization of scientific literature, it was proposed to comprehensively assess the condition of women's teeth during menopause, depending on the intake of hormone replacement therapy, based on the composition of the oral microflora according to CPI, OHI-S, PI, pH of mixed saliva, sialometry and PCR. The survey of respondents is necessary to identify early symptoms of menopause in the oral cavity. In our study, the most common and serious complaints among postmenopausal women were bleeding gums (II-60%; III-25.7%), dry mouth (II-40%; III-17.1%) and bad breath (II-42.9%; III-17.1%). Previous studies have shown that burning mouth syndrome is considered one of the main problems with the oral cavity in menopausal women.1 1. Like xerostomia, one of the main causes of discomfort in the oral cavity, it is often found in postmenopausal women and is directly related to changes in the quantity and/or quality of saliva. 57.5% of postmenopausal women in the Rukmini study complained of dry mouth. Other less common symptoms associated with menopause include changes in taste, saliva viscosity, and pathological changes in the mucous membranes, such as lichen planus, benign mucosal pemphigus, and Sjogren's syndrome.

Numerous studies have proved the need for individual selection of additional oral hygiene products, since the main etiology in the development of dental diseases is the pathogenic effect of biofilm microflora, which is formed with poor-quality oral care. In our study, the study participants most often used mouthwash (I-31.4%, II-42.6%, III-51.4%), dental floss (I-40%, II-37%, III-26.6%) and toothpicks (I-28.5%, II-66.7%) as an additional means for oral care, hygiene products; I-14.3%; II-17.1%; III-14.3%) and interdental brushes (i-0%; II-5.7%; III-2.8%), and none of the study participants used a tongue scraper. According to Budaichieva's study, 53.1% of participants used mouthwashers as additional hygiene products, 44.9% used toothpicks, 23.6% used tongue scrapers, 7.7% used dental floss, 6.4% used brushes for interdental spaces and only 4.4% used cleaning products.According to the

results of Budaichieva and our own research, it became clear that the majority of respondents do not use hygiene products for interdental spaces: interdental brushes and irrigators. This may be due to a low level of dental education and insufficient awareness of the choice of individual hygiene products.

Our study shows that postmenopausal women who do not take HRT have a very high level of caries intensity (CPI index = 17.8±5.15), and women who take HRT have a high level of caries intensity (CPI index = 15.45±5.2). At the same time, there was no significant difference between the group of patients who took HRT and those who did not take it. Previous studies of the effect of menopause on the intensity of caries have revealed statistically significant differences between menopausal women and women of reproductive age.

Conducted hygiene studies in menopausal women have shown a low level of oral hygiene. The hygienic index of OHI-S (OHI-S = 2.99±0.99) in women who did not take HRT was twice worse than in women who took HRT (OHI-S = 2.24±1.4) and 1.73±1.1 times worse than in the control group (OHI-S: 1.7±). Statistically significant differences were found between groups I and II and groups II and III ($p< 0.05$). There were no statistically significant differences between groups I and III ($p >0.05$). This is consistent with the data of other authors on the relationship between menopause and oral hygiene disorders.

J.N.Rukmini and co-authors studied the condition of teeth in postmenopausal women and women with regular menstrual cycles. 82.5% of postmenopausal women had poor oral hygiene compared to 6% of women in the control group, 2.5% of postmenopausal women had good oral hygiene and 67.5% had good oral hygiene. Hygiene of the control group.

Risk factors for osteoporosis were identified in more than 80% of perimenopausal women [5,3]. Hormonal fluctuations that increase the level of bone resorption lead to a decrease in the bone matrix and the content of minerals in the bone tissue. As a result, bone density decreases and there is a tendency to fractures. In turn, periodontitis is characterized not only by resorption of the alveolar bone, but also by the inflammatory process of periodontitis. Osteoporosis and periodontitis are chronic multifactorial diseases that cause bone loss, which is aggravated by local and systemic factors.

The data obtained show that the periodontal condition in postmenopausal women worsens and statistically significantly reflects the exacerbation of the disease in group II (PI: 2.31 ± 1.29 and 1.16 ± 0.75) by 2 times who did not take HRT. This, in turn, may be due to a sharp weakening of the vasoprotective effect of estrogens and the formation of microcirculation of a pathological type.

The data obtained are consistent with the data of other authors. In his study, D.Deep revealed the average periodontal index PI in postmenopausal women, which was equal to 4.34 and corresponded to severe periodontal disease.

CONCLUSION

Thus, the higher sensitivity of the above indicators is associated with the specifics of the pathogenesis of menopause - estrogen deficiency. The content of estrogen receptors on the oral mucosa plays a direct role in the development of dental diseases [11,4]. During menopause, the vasoprotective effect of estrogen weakens, which leads to damage to the structure of the microcirculatory bloodstream. In addition, during this period, the production of osteoclasts increases, the production of osteoblasts decreases, calcium absorption in the intestine decreases, vitamin D deficiency increases and bone resorption increases.

Due to estrogen deficiency, the absorption of calcium in the body by the intestine decreases, which leads to a violation of the regulation of calcium-phosphate metabolism and increases the release of calcium not only in the blood serum, but also in saliva. As a result, a high concentration of calcium in a woman's saliva during menopause can lead to faster calcification of plaque, resulting in increased formation of stones that directly affect the progression of gingivitis and periodontitis. Thus, the pathogenesis of menopause affects the condition of all structures of the oral cavity.

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