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PREVENTION OF COMPLICATIONS OF INFLAMMATORY PROCESSES OF PERIAPICAL TISSUE IN PREGNANT WOMEN

MONOGRAPHY

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Annotation. *In the scientific monograph written by the author, the complications of inflammatory processes in the periapical tissues of pregnant women are investigated and the necessary conclusions and recommendations are reliably presented. Today, many scientific studies in the world are devoted to the development of periodontal tissue diseases during pregnancy. Inflammatory processes of periapical tissues and their complications in the face-jaw area are one of the most common groups of diseases associated with pregnancy. The monograph presents the results of work to improve the effectiveness of complex therapy for inflammatory processes of periodical tissues and the prevention of their complications in pregnant women. The frequency of complications of acute inflammatory processes of periodical tissues in pregnant women, the cytokine profile of oral fluid, the state of micro flora and indicators of general and local immunity of the oral cavity in pregnant women and the course of inflammatory processes of periodical tissues are considered. The possibility of using ultrasound osteometry for early diagnosis of odontogenic inflammatory diseases of periodical tissues is substantiated. An algorithm for providing dental care on an outpatient basis to pregnant women to prevent the spread of odontogenic infection to the surrounding tissues of the maxillofacial area is described in detail. This monograph is intended for maxillofacial surgeons, dentists, clinical residents, masters and students of medical universities.*

LIST OF SYMBOLS

PD – periodontal disease

WHO - World Health Organization

PID – purulent-inflammatory diseases

IL – interleukin

ELISA – enzyme immunoassay

PMA – papillary-marginal-alveolar index

OM – oral mucosa

CRP – C-reactive protein

TSDI – Tashkent State Dental Institute

TNF – tumor necrosis factor

CAP – chronic active periodontitis

CGP – chronic generalized periodontitis

MFA – maxillofacial region

FD – Face-jaw Diseases

RANKL - Receptor activator of nuclear factor kappa-Brigand

INTRODUCTION

According to WHO, in recent years the level of dental diseases and their complications in pregnant women has been steadily increasing. Thus, according to medical statistics, only over the last 3 years, during the physiological course of pregnancy, the prevalence of dental caries has increased to 91.4%, and periodontal tissue diseases to 90% of cases. Secondary caries, progression of the carious process, enamel hyperesthesia occurs in 79% of pregnant women. The particular concern is acutes complications of the above dental diseases, which negatively affect not only the mother's body, but also the health of children. Despite a sufficient number of dentists in advisory clinics, "...at present there is no uniform regulation for conducting timely preventive dental examinations and consultations of women before starting a family, as well as during pregnancy planning"1. Thus, there was a need to formulate a concept that would make it possible to offer modern methods of diagnosis, prevention and treatment of dental diseases among pregnant women, which have the properties of influencing the homeostasis of the oral cavity and the general condition of the body.

Nowadays, many scientific studies around the world are devoted to the development of diseases of periapical tissues during pregnancy. Inflammatory processes of periapical tissues and their complications in the maxillofacial area are one of the most common groups of diseases associated with pregnancy. According to various authors, it has been established that among women with pregnancy pathologies, periodontal diseases were identified in 43.5% of cases, and among women with normal pregnancy – 15.7%. In the studies of L.P. Kiselnikova (2011), gingivitis and periodontitis are diagnosed in 60-93% of subjects, according to T.N. Manak (2017) the prevalence of caries and periodontal diseases in pregnant women in Minsk reaches 81-98%. According to the Ministry of Health of the Russian Federation, the need for dental therapeutic care occurs in 94.7% of pregnant women, and according to I.I. Bakulina (2010) 84.6-92.5% of women develop gingivitis during pregnancy.

In our country, large-scale measures are being taken to develop the medical system, in particular, to reduce dental diseases and their complications, as well as to provide qualified medical care to patients with this pathology. In this regard,

the following tasks have been identified: “... increasing the efficiency, quality and accessibility of medical care, supporting a healthy lifestyle and preventing diseases, including through the formation of a system of medical standardization, the introduction of high-tech diagnostic and treatment methods, effective models of patronage and medical examination. These tasks determine priority areas for conducting in-depth scientific research, such as raising the provision of modern medical care, diagnostics and treatment of complications of dental diseases among the population to a new level, and the use of modern technologies in the provision of quality medical care.

This dissertation research certain extent serves to fulfill the tasks approved by the Decree of the President of the Republic of Uzbekistan “On the Action Strategy for the further development of the Republic of Uzbekistan” No. PO-4947 dated February 7, 2017, and the Resolutions of the President of the Republic of Uzbekistan “On measures to further deepen reforming the healthcare system" and No. PO-3071 dated June 20, 2017, "On improving the quality and further expanding the coverage of medical care provided to women of reproductive age, pregnant women and children" No. PO-4513 dated November 8, 2019, "On measures to further development of specialized medical care to the population of the Republic of Uzbekistan for 2017-2022" No. PO-3071 dated June 20, 2017, "On the organization of critical study and preparation of proposals for radical improvement of the healthcare system" No. PO-5274 dated

In the occurrence of odontogenic inflammatory diseases over a long period of time, the main role was played by pyogenic aerobic and facultative anaerobic microflora: staphylococci - 15%, streptococci in 6% and obligate anaerobic bacteria - in 79% of cases. This composition of the microflora of the odontogenic lesion was determined in numerous microbiological studies (Romanova V.L., 2014; Kazakov R.D., 2015). Odontogenic inflammatory diseases of the maxillofacial area during pregnancy are characterized by special clinical manifestations or have more severe consequences. Acute infections, accompanied by severe intoxication and hyperthermia, can stimulate the activity of the uterus and thereby lead to termination of pregnancy.

Based on a retrospective analysis, an increase in the number of hospitalizations of pregnant women with complications of acute inflammatory processes of periapical tissues was revealed;

It has been proven that the content of lactoferrin in saliva in pregnant women increases;

the high diagnostic significance of the use of ultrasound osteometry in assessing bone tissue density in odontogenic inflammatory diseases of periapical tissues has been proven;

It has been proven that when the procedure for bone osteo perforation in focal areas of the jaws in pregnant women is included in the complex treatment, the effectiveness of the treatment measures increases compared to traditional treatment.

The practical results of the study are as follows: it is proposed to include the osteoperforation technique in the process of surgical intervention as part of the complex treatment of odontogenic inflammatory diseases of periapical tissues in pregnant women; an algorithm for the treatment of purulent-inflammatory processes of periapical tissues in pregnant women on an outpatient and inpatient basis was developed and implemented, which made it possible to prevent the development of complications of pathological processes; a definition of the diagnostic effectiveness of ultrasound osteometry in pregnant women with odontogenic inflammatory diseases of the periapical tissues is given.

The reliability of scientific results is justified by the correctness of modern methods and approaches used in the work, the correspondence of the results obtained with theoretical data, the accuracy of the tests performed, a sufficient number of patients, the validity of medical and statistical materials using clinical, biochemical methods, and a comparison of the results obtained with the data of foreign and domestic researchers; conclusion, confirmation of the results obtained by authorized structures.

Scientific and practical significance of the research results. The scientific significance of the result gazered lies in the fact that the data obtained at the stages of treatment of inflammatory processes of periapical tissues in pregnant women and it made possibility to develop an algorithm for conducting diagnostic

studies in order to increase the prevention of complications of purulent-inflammatory processes in the maxillofacial area while assessing the effectiveness of surgical treatment.

The practical significance of the study lies in the fact that the developed low-traumatic method of osteoperforation of infected bones and can be used by dental surgeons both in hospitals and in outpatient clinics under local anesthesia, reduces treatment time and provides economic benefits.

Implementation of research results. Based on the scientific results obtained on the study of dental status, treatment of inflammatory processes of periapical tissues and prevention of purulent-inflammatory processes in the maxillofacial area in pregnant women:

Based on scientific results aimed at developing therapeutic and diagnostic methods for the prevention of odontogenic inflammatory diseases of periapical tissues in pregnant women, the methodological recommendation “Treatment and diagnostic algorithm for the prevention of inflammatory processes in odontogenic infections in pregnant women” was approved (conclusion of the Ministry of Health of the Republic of Uzbekistan 8n-d/ 955 of October 12, 2021). This methodological recommendation makes it possible to identify the causes of complications, conduct diagnostics and apply prevention of inflammatory processes in the maxillofacial area in pregnant women;

Based on scientific results aimed at preventing humoral and cellular immunity for odontogenic infections in pregnant women, a methodological recommendation “Method for diagnosing humoral and cellular immunity in pregnant women with odontogenic inflammatory diseases” was approved (conclusion of the Ministry of Health of the Republic of Uzbekistan 8n-d/956 dated October 12 2021). This methodological recommendation makes it possible to predict and evaluate the effectiveness of the treatment. use of minimally invasive controlled surgical treatment, which helps improve the quality of life of pregnant women;

the developed methods have been introduced into practical healthcare, in particular, into the activities of Clinical Hospital No. 1 of the Samarkand State Medical Institute and the Samarkand Regional Dental Clinic (conclusion of the

Ministry of Health of the Republic of Uzbekistan 8n-z/398 dated November 4, 2021). The implementation and application of the research results made it possible to increase the level of dental care provided to pregnant women, reduce the time of their treatment and improve their quality of life.

The most important task of medicine is to preserve both the health of the mother and the health of the child. To solve this problem, specialists from different fields, including dentists, participate. Of all types of emergency or planned medical care, dental professional care should be mandatory during all periods of pregnancy. Organization of dental examination, sanitation and prevention of inflammatory diseases of the oral cavity in pregnant women is one of the most important and main tasks of modern dental care for the population. For early detection of various inflammatory processes of the oral cavity and monitoring the effectiveness of the sanitation, as well as to prevent the development of complications, it is necessary to routinely carry out dynamic monitoring of the dental status and condition of the oral cavity in pregnant women during all periods of pregnancy. Prevention of various dental diseases of different origins in pregnant women at the primary level is an urgent problem of modern medicine. At the same time, the main purpose of medical examination of these women is dental examination, while the main role should be given to the sanitation of the oral cavity.

Dental care provided during pregnancy its own characteristics, which are based on physiological changes in the body. Govindasamy R, Periyasamy S, Narayanan M, 2020 report the effect of non-surgical periodontal therapy on adverse pregnancy outcomes: a systematic review of current evidence. Poor maternal oral health during pregnancy affects the fetus through the oral-systemic link.

Various studies have shown a link between poor maternal oral health and adverse pregnancy outcomes. Thus, periodontal therapy becomes indispensable during pregnancy. 75% of patients with chronic periodontitis in the register of therapeutic and surgical dentistry constitute a serious problem, due to the complexity and labor-intensiveness of medical procedures, a high percentage of failures and complications during treatment. In addition to the pain syndrome characteristic of this disease, the presence of a focus of odontogenic infection poses a danger to tissues, organs of the

oral cavity and the body as a whole due to the progressive replenishment of the microbial landscape of oral fluid, pathogens, and bacteriotoxins. The result of this dental pathology is premature loss of teeth and, the connection with this, disruption of the functions of chewing and speech, the aesthetics of the dentition in people of any age, which creates conditions for other dental and somatic pathologies. And once again emphasizes the relevance of the problem of finding effective endodontic treatment for periodontitis. The main reason for unfavorable outcomes of treatment of teeth with chronic apical periodontitis is inadequate sanitation of the root canal system. The frequency of exacerbations in the immediate and long term after traditional endodontic treatment remains high. The literature describes important links in the pathogenesis of chronic periodontitis with the rationale for various treatment methods. To a lesser extent, the factor of further spread of the infectious focus in the periapical tissues and the formation of relapse, sensitization of the body and conditions for the development of chroniosepsis are taken into account. All the difficulties expressed lead to a new, more complete imbalance of periapical tissues, oral fluid, blood, and the subsequent selection of optimal treatment methods that are relevant for new pathological conditions that have emerged. Despite the variety of methods for treating chronic apical periodontitis, the treatment of exudative-destructive inflammation of the periapical tissues of the tooth root has not yet been achieved; the need for detoxification, stabilization of immune mechanisms and prevention of relapses of exacerbation of chronic periodontitis are not always taken into account. In connection with this, there is a need to conduct a comparative analysis of existing treatment methods and conduct scientific research aimed at improving known and developing new complex methods of treating chronic apical periodontitis. The results of the study contributed to the improvement of diagnosis and complex treatment of chronic apical periodontitis. The proposed method for studying bacteriological exudate from the root canal and periapical area of the tooth, a treatment complex, which made it possible to identify a stimulating effect on improving the immune local and general status of the body.

CHAPTER I. FEATURES OF ETIOPATHOGENESIS AND COURSE OF INFLAMMATORY PROCESSES IN THE MAXILLOFACIAL AREA IN WOMEN DURING PREGNANCY.

1.1. Prevalence and risk factors for the development of dental diseases in pregnant women.

The organization and provision of dental care to the population plays a huge role in shaping the dental health of pregnant women. During pregnancy, women experience an increased load on all organs and systems of the body, including the dental system. The established system in the provision of dental care during pregnancy, in the form of planned sanitation of the oral cavity, has a positive effect on the early detection of diseases of the oral cavity and the possibility of starting treatment and prevention, with the possibility of treating exacerbation of chronic processes of an odontogenic nature. Performing therapeutic and preventive procedures for pregnant women allows them to maintain the health of the mother and create adequate conditions for the intrauterine development of the child. Literary sources on the study of this issue indicate that pathologies of the oral cavity in pregnant women lead to death and there are foci of chronic infection in the general somatic and oral cavity [6; p.65-68].

At the same time, literary data from scientists and dentists indicate a high prevalence of dental diseases in pregnant women, the causes of somatic background in women, the prevention of dental diseases, oral hygiene, etc.

According to a number of authors [34; p.12-15] gingivitis in 50% of pregnant women is observed in a normal course during 2-3 months of pregnancy. According to Grinin V.M. (2018), frequency of occurrence and the prevalence of caries among pregnant women is up to 94.6% and 38% of the examined patients have a relapse, and the prevalence of mild and moderate chronic generalized periodontitis (CGP) is a total of 20.7% [18; p.19-22].

In an experimental study by a number of authors (Bain J.L., Lester S.R., Henry W.D., 2009), the effect of induced periapical abscesses on pregnant rats was determined. In 1/2 of the animals (n=16), the pulp of the maxillary right molars was exposed to the oral environment, which led to a periapical abscess.

The remaining 1/2 (n=16) were the control group. 1/2 of the animals in both groups became pregnant after 2 weeks. At birth, the duration of pregnancy, weight and number of pups were assessed. Serum, liver and uterine horn samples were collected from all animals at euthanasia, and serum IL-6, endothelin-1, TNF-α, IL-10, cortisol and insulin were determined by ELISA. ELISA was used to evaluate the concentrations of liver IL-6, CRP and IL-6, as well as the concentrations of uterine horn IL-6, vascular endothelial growth factor (VEGF), TNF-α, IL-10 and IL-1-β. Significant increases in serum TNF-α levels coupled with significant increases in blood glucose and serum insulin concentrations have been shown to suggest that animals with induced periapical abscesses have developed insulin resistance, which significantly affects pregnancy outcome.

Grinin and co-author. (2020) proves that pregnant women have a higher risk of dental disease. It has been proven that changes in the risk of dental caries during pregnancy, mild and moderate CGP, older age, recurrent births and miscarriages, pregnancy complications, as well as mild and moderate CGP in pregnant women, diseases of the digestive system, musculoskeletal system, anemia and endocrine diseases increase the risk of miscarriage. Data analysis showed that dental caries pregnant women is 94.6% (including caries that was treated during pregnancy before pregnancy - 38%), mild to moderate CGP - 20.7% [19; pp.12-17, 117; pp.565-573].

We can observe the increasing of hormones in pregnant women, which are progesterone, human chorionic gonadotropin, relaxin and others and the microbial landscape changes, as a result, pathogenicity of the microflora increases. All this leads changes rapidly in the dental system of pregnant women. Such changes are manifested in the emergence of new complaints of toothache, decreased oral hygiene, increased salivation, the appearance of halitosis, bleeding gums and a shift in the pH of saliva. Foci of chronic infection in diseases of the periapical tissues of the teeth, radicular cysts, chronic inflammatory diseases of the tissues of the periodontal complex, endotoxins produced by pathogenic microorganisms, tissue breakdown products enter the bloodstream and lymphatic system, then spread throughout the human body. This can negatively affect the normal course of pregnancy, can lead to premature birth and the birth of a child with low body

weight, various types of organ abnormalities, as well as on the health of the child [48; pp.99-103].

Indian scientists (Palupi, R., Juzika, O., Romadhoni, S.F. 2019) argue that severe periodontal diseases in a pregnant woman can produce inflammatory mediators that can threaten the fetal placenta, thereby increasing the likelihood of premature birth. The authors show the results of an analytical study of pregnant women from the Javanese ethnic group in the city of Surabaya, Indonesia. The sample calculation was carried out using a simple random sampling method, and amounted to 49 pregnant women. The obtained data were analyzed using Spearman's correlation test and multiple linear regression test. In this study, 65.3% of pregnant women had periodontal abnormalities in the form of gingivitis. This study revealed several predictive factors linearly associated with the occurrence of periodontal problems in pregnant women, namely: the state of tissues and oral hygiene, maintaining dental health and hygiene, family support, knowledge about the hygiene of family members of a pregnant woman [135; p.1046-1050].

Another study by Indian researchers (Baskaradoss Jagan Kumar, 2020) show the consequence of a cross-sectional survey in two maternity and children's hospitals in India, which primarily serve middle- and low-income communities. The primary outcome of interest was dental care use during pregnancy. Self-rated oral health (SPOH) was calculated based on four global dimensions—knowledge, function, quality of life, and social. Multiple logistic regression analysis was performed to evaluate the effect of each independent variable after adjusting for the effect of all other variables in the model. Responses from 450 (150 pregnant, 150 postpartum, and 150 six-month) women were analyzed (response rate = 72%). Significant differences in the structure of dental office attendance were observed between the study groups. Dental attendance rates among pregnant and 6-month postpartum women were 60 and 75%, respectively, but only about 15% of postpartum women were reported to have sought dental care in the 6 months preceding the study. Postpartum women had the highest SPOH scores, indicating poor self-perceived oral health, followed by pregnant women and then six-month postpartum women, which was statistically significant. Patterns of dental service

use among women in this population varied depending on their pregnancy status, educational level, and self-rated oral health [93].

A group of authors (Figueiredo, M.G.O.P., Takita, S.Y., Dourado, B.M.R. 2019) shows that periodontal disease during pregnancy causes an exacerbation of the immune response with high local and systemic concentrations of inflammatory markers. In their study, the authors examined the impact of periodontal disease (PD) on the health of pregnant women and complications during pregnancy and childbirth, as well as negative outcomes for the newborn (in the form of infections, prematurity, low birth weight and fetal growth restriction). Using the method of a retrospective cohort study, medical records of 142 pregnant women who received care in a routine risk prenatal service during the period 2012-2014 were selected, with a dental assessment for PD. Maternal, delivery and neonatal variables were analyzed. Newborns were stratified into two groups: children of mothers with PD (divided into severe periodontal disease - SPD) and children of mothers without PD. For newborns, the odds of fetal growth restriction were 11.53 times higher in pregnant women with SPH (OR = 11.53, p = 0.041). Thus, risk factors for periodontal disease have been established. Periodontal diseases increase the likelihood of neonatal and maternal negative outcomes, being fetal growth restriction, vulvovaginitis and premature rupture of the membrane the main results due to the presence of severe periodontal disease [10; pp.27-29, 102].

Periodontal status and associated risk factors among women of childbearing age in the city of Cixi Chin are presented in the work of Chinese authors (Yan-min Wu, Jia Liu, Willian Sun 2013). The work was carried out on women of childbearing age in Cixi, a city in Zhejiang province in southeast China. A total of 754 women participated in periodontal screening during prenatal care. Data on women were collected from the Cixi Family Planning Commission and through interviews. During the study, clinical periodontal parameters such as bleeding on probing (BOP),probing depth (PD) and clinical attachment level (CAL). The prevalence of periodontal disease among women of childbearing age in Cixi was high (84.7%). A significant association was found between the disease and level of education, pregnancy, taking oral contraceptives, stress,

drinking alcohol, being overweight, visiting the dentist, and brushing your teeth. Among this population, pregnancy was strongly associated with higher rates of pregnancy pathology; brushing teeth no more than once a day or brushing teeth for less than 1 minute after adjusting for age and stress. The scientists concluded that the periodontal status of women of childbearing age in Cixi needs urgent improvement. Attention to periodontal health should be justified, especially for those in special conditions and poorly informed about dental culture [137; p.2621, 138; p.7017, 141; p.75, 148].

A group of authors (Grinin V.M., Makeeva I.M., Gosteva N.S. et al. 2020) examines the structure of inflammatory processes in the tissues of the periodontal complex and the dynamics of periodontal status in pregnant women during pregnancy. Based on the analysis of 165 pregnant women with reliably established inflammatory periodontal diseases, the structure of inflammatory periodontal diseases and the periodontal status of pregnant women during gestation were studied; The influence of various factors on the dynamics of a number of periodontal and hygienic indices is considered. A significant deterioration in the periodontal condition of pregnant women with age has been proven against the background of hormonal changes during the gestational period [19; pp.12-17, 130; pp. 122, 131; pp.990154-990162, 133;pp.237, 134; p.4156165].

The authors consider low hygienic status to be one of the main risk factors for dental diseases in pregnant women. This is largely due to the insufficient knowledge of pregnant women about oral hygiene and unsatisfactory oral hygiene. Author Kiselnikova L.P. (2017) reports that there is no evidence that pregnancy is a risk factor for the occurrence of malformations, but in the clinic the occurrence of a cariogenic situation in pregnant women is often observed and, accordingly, a high risk of developing a defect. The increased risk of caries during this period is associated with a temporary deterioration in oral hygiene, a temporary change in food preferences, and an increased carbohydrate content. In addition, due to hormonal changes in pregnant women, the functional activity of the major and minor salivary glands often decreases, the amount of saliva decreases, and the process of enamel remineralization decreases [33; pp.82-85].

According to the author of the study, E. V. Chibichyan (2018), one of the factors affecting the state of periodontal disease and orthotropic mediators in the oral cavity in pregnant women is vitamin D deficiency [71; pp.138-140, 72; p.3-36]. The periodontal condition index was assessed in pregnant women with vitamin D deficiency and the significance of osteotropic mediators in the oral fluid in the pathogenesis of diseases was determined. 42 pregnant women with vitamin D deficiency and 31 pregnant women with normal vitamin D levels (30-100 ng/ml) were examined. During the study, the condition of the tissues of the periodontal complex was assessed by determining the value of the green germ layer, the papillary-marginal alveolar index, and the hygienic index of the periodontal index. In the oral fluid, the concentration of osteoprotegerin and activator of ligand-soluble kappa B nucleation factor (srancl), cathelicide LL-37, was determined by enzyme immunoassay. Periodontal pathology in pregnant women with vitamin D deficiency is more common than in pregnant women without vitamin D deficiency. In pregnant women with vitamin D deficiency, the concentration of osteoprotegerin in the oral fluid decreased simultaneously with an increase in srancl/osteoprotegerin, which in turn contributes to the occurrence of resorption of jaw bone tissue . At the same time, a decrease in the level of osteoprotegerin in mixed saliva in women with this pathology is accompanied by an increase in the level of cathelicidin LL-37 during periodontitis, which promotes the activation of antimicrobial mechanisms in the oral cavity. Vitamin D deficiency activates mechanisms such as increased resorption of alveolar bone tissue, changes in the activity of innate immune mechanisms, and these in turn lead to the development of inflammatory processes in the tissues of the periodontal complex during pregnancy.

Scientists of Uzbekistan are not able to ignore this problem. The works were carried out by the authors: Yuldasheva N.A. 2014; Irsaliev Kh.I. 2014, Kamilov Kh.P. etc. In pregnant women, periodontal lesions are recorded (bleeding gums upon probing, the presence of sub- and supragingival tartar, periodontal pockets of varying depths, reflecting the course of an inflammatory-destructive lesion), gingivitis and caries are noted [28; pp.147-153, 30; pp.15-18, 76; pp.35-39, 77; p.6-10]. In the work of Yuldasheva N.A. (2014) have proven

that increased levels of estrogen and progesterone in the gum mucosa affect vascular permeability and exudation. Microcirculatory disorders in periodontal tissues lead to dystrophic disorders, decreased barrier function, thereby enhancing the inflammatory process in periodontal tissues [28; pp.147-153, 76; pp.73-79, 77; p.6-10]. Work on prevention, treatment and provision of dental care is carried out in all these areas.

Duration of the regeneration processes of the focus of destruction of the periapical region raised some difficulties, which are observed mainly 6–12 months or more after completion of endodontic treatment. Another problem that complicates endodontic therapeutic effect on the periodontium is the 4th feature of the anatomical structure of the root canals of the teeth. The literature describes important links in the pathogenesis of chronic periodontitis with the rationale for various treatment methods. To a lesser extent, the factor of further spread of the infectious focus in the periapical tissues and the formation of relapse, sensitization of the body and conditions for the development of chroniosepsis are taken into account. All the difficulties expressed lead to a new, more complete imbalance of periapical tissues, oral fluid, blood, and the subsequent selection of optimal treatment methods that are relevant for new pathological conditions that have emerged. Despite the variety of methods for treating chronic apical periodontitis, the treatment of exudative-destructive inflammation of the periapical tissues of the tooth root has not yet been achieved; the need for detoxification, stabilization of immune mechanisms and prevention of relapses of exacerbation of chronic periodontitis are not always taken into account. In connection with this, there is a need to conduct a comparative analysis of existing treatment methods and conduct scientific research aimed at improving known and developing new complex methods of treating chronic apical periodontitis. The results of the study contributed to the improvement of diagnosis and complex treatment of chronic apical periodontitis. The proposed method for studying bacteriological exudate from the root canal and periapical area of the tooth, a treatment complex, which made it possible to identify a stimulating effect on improving the immune local and general status of the body. Ways have been found to prevent relapses and prevent complications of periodontitis. Periodontitis or periodontitis is a pathology affecting the periodontium.

1.2. Providing dental care to pregnant women with diseases of the oral cavity.

The most important task of medicine is to preserve both the health of the mother and the health of the child. To solve this problem, specialists from different fields, including dentists, participate. Of all types of emergency or planned medical care, dental professional care should be mandatory for all periods of pregnancy. Organization of dental examination, sanitation and prevention of inflammatory diseases of the oral cavity in pregnant women is one of the most important and main tasks of modern dental care for the population. For early detection of various inflammatory processes of the oral cavity and monitoring the effectiveness of the sanitation, as well as to prevent the development of complications, it is necessary to routinely carry out dynamic monitoring of the dental status and condition of the oral cavity in pregnant women during all periods of pregnancy. Prevention of various dental diseases of different origins in pregnant women at the primary level is an urgent problem of modern medicine. At the same time, the main purpose of medical examination of these women is dental medical examination, while the main role should be given to the sanitation of the oral cavity [34; pp.12-15, 62].

Features of dental care during pregnancy are based on physiological changes in the body of a pregnant woman. Govindasamy R, Periyasamy S, Narayanan M, 2020 report the effect of non-surgical periodontal therapy on adverse pregnancy outcomes: a systematic review of current evidence. Poor maternal oral health during pregnancy affects the fetus through the oral-systemic link. Various studies have shown a link between poor maternal oral health and adverse pregnancy outcomes. Thus, periodontal therapy becomes indispensable during pregnancy. The authors conducted this review to evaluate the impact of periodontal therapy on adverse pregnancy outcomes, including studies published to date. The Cochrane risk of bias tool was used to assess the risk of bias among

studies. Among studies, frequency rate of preterm birth in pregnant women receiving periodontal therapy ranged from 0% to 53.5%, while in the control group the range was 6.38%-72%. The incidence of PVT among mothers receiving treatment for periodontal disease ranged from 0% to 36%, and in the control group from 1.15% to 53.9%. Based on the best available evidence, it can be concluded that non-surgical periodontal therapy is safe during pregnancy. Although it does not completely prevent adverse pregnancy outcomes, it can be recommended as part of prenatal care [110; pp.7-14, 112; pp.222-224, 114; p.576-583].

The author (Korneeva M.V. et al., 2015) noted that among the complex issues of practical dentistry is the treatment of patients with chronic destructive forms of periodontitis. In recent years, it has been proven that the frequency and severity of the clinical course of inflammatory processes in the oral cavity and periapical tissues is influenced by the somatic background. 47 women (aged 18-30 years) with indications for surgical treatment of chronic apical periodontitis were examined. In this case, the exclusion criteria are women with cholesterol, systemic connective tissue diseases, women taking hormonal contraceptives, pregnant women, miscarriages, childbirth, lactation less than a year ago. The authors assessed the degree of damage to periapical tissues and the postoperative period depending on the disturbance of iron metabolism. The indicators of red blood and iron metabolism were studied, and iron metabolism disorders were identified in the pathogenesis of purulent-inflammatory periodontal diseases. Against the background of impaired iron metabolism in the periapical tissues, inflammatory and destructive processes intensively develop, and a pattern of complicated course of the postoperative period is revealed. Criteria for unfavorable prognosis in the postoperative period in patients with chronic periodontitis have been established. Iron deficiency contributes to wider damage periapical tissue and the development of complications in the postoperative period [6; p.65-68].

The authors (G. Atayeva Z., Abakarov S. I. et al. 2013) share their experience of successful treatment of pulpitis of permanent teeth in pregnant women. Many authors point out the need for scientific justification for the choice

of methods for treating pulpitis in pregnant women. This allows you to shorten treatment time, reduce pain, reduce radiation exposure, etc. The amputation method of treating pulpitis is associated with fewer visits to the dentist (which has a psychological and moral negative impact on pregnant women), less pain and, in particular, less radiation exposure . When using this method there is no pain, and the duration of treatment procedures is reduced. This allows pregnant women with various dental diseases to be treated at different periods of pregnancy with minimal risks [8].

The authors (Denisenko L.N., Danilina E.V., 2010) assessed the condition of the periodontium of pregnant women with iron deficiency anemia before and after treatment. The survey was carried out using an index questionnaire to study the condition of the tissues of the periodontal complex. During the study, complex treatment was carried out using professional oral hygiene with selected anti-inflammatory therapy. The use of hexaspray in complex treatment, pregnant women noted a slight analgesic effect (after 5-10 minutes), a pleasant taste in the mouth, and the absence of irritation of the mucous membrane of the oral tissues. The authors used local hypothermia, while the affected area was treated with a stream of nitrogen gas at a temperature of 5 °C for 12 minutes. The results of treatment were assessed using clinical methods for studying the dynamics of the process: visual examination, determination of the depth of periodontal pockets using periodontal, graded probes, determination of the hygienic index according to the Fedorov-Volodkina method, PMA index (prevalence of inflammation in the gums), test Schiller-Pisarev. The results of the survey showed that pregnant women had bleeding gums in the main group in 84% of cases, and in the control group in 72% of cases. Enamel hyperesthesia was observed in 69% and 62% of cases, respectively, in the groups. A small proportion of women, ranging from 7% to 18%, did not report significant changes in their oral health during pregnancy. The hygiene index values decreased and corresponded to normal average values. Depending on the severity of the inflammatory process in the oral cavity, positive dynamics were observed in 3-5 visits; in 7-10 visits, the inflammatory process in the periodontal tissues almost completely stopped. Thus, in pregnant women, during the treatment of dental pathologies, there is an improvement in the

condition of the oral cavity in the studied groups [21; pp.14-19, 61; pp.31-34, 104, 105; p.301-310].

A group of scientists (Petrov I.A., Belova O.E., 2016) presented therapeutic and preventive measures for pregnant women with initial forms of ICD. When conducting a comparative assessment of the effectiveness of using toothbrushes and oral irrigators for individual oral hygiene in pregnant women, recommendations were developed. For adequate and effective individual hygiene of the oral cavity and especially teeth, the authors recommend the use of various types of individual irrigators (with various attachments in combination with antiseptic solutions) to prevent inflammatory diseases of periodontal tissues and teeth. The results of the study showed that in order to achieve a good and stable effect during the treatment of periodontal tissue diseases and carious diseases of hard dental tissues in pregnant women, it is recommended that professional hygiene be carried out by a hygienist every 2 months and be under the supervision of a dentist. The results of other studies show that 3 visits to the dentist are not enough to stop pathological processes tissues of the periodontal complex, therefore the authors recommend visiting a dentist up to 4 times during pregnancy, and also continue monitoring with a dentist during breastfeeding [56; pp.117-122].

Some authors (Chuykin S.V., Akmalova G.M., 2019) describe the results of increasing the effectiveness of local treatment of inflammatory diseases of periodontal tissues in pregnant women complicated by gestosis (a complication of a normal pregnancy). The authors evaluate the clinical effectiveness of topical application of a chewable Phyto substrate for inflammatory gum diseases in pregnant women with complications of a normal pregnancy. During the study, 127 pregnant women were examined, of which 79 pregnant women with complications of a normal pregnancy and 48 pregnant women with a physiological course of the pregnancy process, aged 18-34 years, in the second and third trimesters. The authors studied the status of oral tissues and the physicochemical properties of saliva in pregnant women complicated by gestosis before and after using the Phyto substrate and established the high efficiency of using a chewing substrate for the prevention and treatment of inflammatory gum

diseases in pregnant women complicated by gestosis. This is confirmed by an improvement in the biochemical parameters of saliva, as well as dental indices [74; pp.69-74].

Medicines used in the treatment of periodontal diseases in pregnant women are often contraindicated due to the risk of having a toxic and teratogenic, as well as fetotoxic effect on the embryo. Therefore, the choice of optimal and effective, most importantly safe, medications in the treatment and prevention of inflammatory diseases of periodontal tissues, as well as reducing the risk of developing pathologies of periodontal tissues and hard dental tissues in pregnant women is of high importance [20; p.304-310]. According to literature data, the most dangerous critical periods in Embryogenesis for dental caries is considered to be 1-3 and 3-16 weeks of embryogenesis. During such periods, taking medications can lead to the death of the embryo or the formation of anomalies. In the 1st trimester of pregnancy, a prerequisite is planned preventive sanitation of the oral cavity: the choice of means and methods of individual oral hygiene, professional hygiene for the prevention of inflammatory diseases of the periodontal tissues, gentle methods of treating diseases of the hard tissues of the teeth. These activities should be carried out in the 2-3 trimester with a frequency of 1-2 times per trimester.

Treatment and prevention of inflammatory periodontal diseases involves early rehabilitation, which is important for the prevention of intrauterine infection of the embryo. With preventive massage of gum tissue, metabolic processes are improved, the turgor of the mucous membrane of the gum tissue is normalized, and microcirculation in the tissues of the periodontal complex is improved. In the complex treatment of chronic inflammatory gum diseases in pregnant women with thrombophilia, he recommends the use of 5-7 courses of laser therapy (Smirnova A.M., 2011). Kutusheva (2009) suggests using the Polysorb MP sorbent and the herbal medicine “tooth pen”, Mexidol-Dent active toothpastes [51; pp.44- 53, 52; pp.18-25, 53; pp.85-89].

Medicines containing adrenaline and norepinephrine should be prescribed with extreme caution, especially in late pregnancy. Since these substances increase the risk of contractions of the uterine muscles and can lead to premature

birth. The drugs vasopressin (or antidiuretic hormone (ADH)) and filipressin (octapressin) should not be used during pregnancy, as these drugs increase contractions of the uterine muscles. As a result, the choice of local anesthetic based on mepivacaine can serve as a drug: Mepivastesin 3%, Scandonest 2% SVC, Mepidont. If we compare local anesthetic drug mepivacaine with a local anesthetic of the amide type, short-acting lidocaine hydrochloride according to their effectiveness, in this case the first drug is hypoallergenic and the vasodilating effect of this drug is minimal. In addition to these local anesthetic drugs, articaine preparations without vasoconstrictors, septanest 4% SVC, ultracaine D, etc. can be used in practice in the treatment of diseases of teeth and periodontal tissues in pregnant women.

When treating dental diseases in pregnant women, it is necessary to take into account some features. For example, the use of 37% phosphoric acid leads to demineralization of the enamel. This in turn creates a condition for the development of caries in this place. Therefore, the use of a 7th generation bonding system is a more adequate and optimal solution in such situations. For permanent filling and restoration of deep carious cavities on teeth, both glass ionomer cements, consisting of powder and liquid and created by combining the properties of silicate and polyacrylic systems, and compomers - restoration filling materials, which are composite ionomer compositions and composite light-curing materials can be used . In addition, glass ionomer cements, created by combining the properties of silicate and polyacrylic systems, as well as compomer filling materials - which are composite ionomer compositions - are used in the so-called “sandwich” technique for filling as an insulating gasket, as well as for restoration.

Thus, knowledge of the features during different periods of pregnancy allows dentists to competently and with minimal risk carry out clinical observation of patients in this category: with minimal risk to ensure the required volume dental interventions in a timely manner and obtain favorable results.

According to Nasonova V.F. (2011), modern local anesthesia during a dental appointment in any trimester of pregnancy in women, psychological correction of the emotional state should be performed painlessly using premedication. Since any psychological trauma during pregnancy can be

dangerous to the health and life of both the child and the mother. Thus, when using a large dose of local anesthetic drugs during pregnancy, respiratory depression is possible. Therefore, a group of scientists have developed recommendations for choosing optimal and rational local anesthesia in pregnant women during the treatment of dental diseases at a dentist's appointment. These recommendations include not only schemes for choosing a drug and method of pain relief, but also the use of sedative, analgesic methods for correcting the psychological state of pregnant women for safe dental treatment without additional risk [6; pp.65-68, 52; pp.18-25, 66; p.47-51].

Thus, using the close interaction of obstetricians-gynecologists and dentists, modern anti-inflammatory treatment of periodontal tissues should be developed, which should improve the condition of the teeth, dental status and quality of life of pregnant women. The importance of maintaining oral hygiene in pregnant women is very important, and the treatment of chronic odontogenic inflammatory processes not only improves the dental condition of pregnant women, but also helps eliminate extragenital diseases, which in turn has a beneficial effect on the health of the mother of the unborn child.

1.3. Modern ideas about the role of cytokines in the development of the inflammatory process of the maxillofacial area.

It is known that different people with the same diagnosis of purulent-inflammatory diseases of the maxillofacial area experience different course of the process and dynamics of recovery. The development and clinical course of the purulent-inflammatory process depends on the ratio of pro-inflammatory and anti-inflammatory cytokines, small peptide information molecules that are produced by cells of the organs of the human immune system during the development of inflammation due to infection and are active in very small concentrations. Numerous studies have been conducted in different countries of the world to study individual cytokines in purulent-inflammatory diseases of the maxillofacial area. However, the full picture of the cytokine profile in this pathology has not been studied [25; pp.128].

Odontogenic inflammatory diseases of the maxillofacial area are sometimes complicated by the development of sepsis. Some scientists have studied the

cytokine profile in severe diseases with systemic inflammatory response syndrome. These infections occur in combination with the activation of IL-6 and IL-8, TNF and IL-1, as well as secondary proinflammatory cytokines, defined as primary production in response to infection [73, 87; pp.4131-4136,].

Many authors suggest that the increase in the number of patients with purulent-inflammatory diseases of the maxillofacial area and neck is associated with a sharp decrease in the resistance of the human body. In this regard, conducting research to study systemic and local immunological changes is a promising direction in the field of diagnostics, making it possible to clarify the development and course of purulent-inflammatory diseases of the maxillofacial area and neck, as well as carry out effective comprehensive treatment. Domestic and foreign literary sources of recent years contain data on studying the state of the immune system in patients with purulent-inflammatory diseases of the maxillofacial area and neck [3; pp. 12- 16, 10; pp.27-29, 56; pp.117-122]. At the same time, conflicting views on the nature of changes in various immunological indicators, as well as the little-studied correlation between indicators of cytokine and immune status in such diseases require a more in-depth analysis of this issue. The effectiveness of currently existing treatment methods determines the need for new approaches to the complex treatment of this type of disease, aimed at correcting immunological processes.

In this regard, the recombinant human drug IL-1–betaleukin, which has a biological effect and is used for local immunotoxicity in odontogenic phlegmon, deserves attention [11; pp.12-18, 12, 19;]. In surgical practice, betaleukin, in addition to recombinant human IL-2, ronsoleukin is also widely used; it functions as a natural analogue of the cytokine, replenishing the deficiency of endogenous IL-2 in secondary human immunodeficiency. There are literary data from foreign scientists about the positive experience of using local ronsoleukin for severe bacterial infections [4; pp.14-17].

Acute odontogenic osteomyelitis of the jaws is common among inflammatory diseases of the maxillofacial region. This is primarily due to the prevalence of caries and its complications among people, especially in the post-Soviet space. In developed countries, the prevalence and incidence of caries and

its complications are several times lower. This is primarily due to preventive measures and promotion of individual oral hygiene in general healthy lifestyle among the people of the country. The clinical course of osteomyelitis is determined by the type, quantity and quality of the pathogen. In addition, there are criteria such as the nature of the course and the degree of system-wide and local changes in the form of immunological and metabolic disorders in the tissues of various organs, as well as how the body reacts to the inflammatory process [79; pp.35-39, 80; 105 pp]. Due to its characteristics of the maxillofacial area, the risk of an unfavorable outcome in pregnant women is very high, in addition, in more than 5% of cases, osteomyelitis of the jaws becomes a chronic form of the disease [95; pp.823-832, 96;].

It is known that immunological and peroxidative processes are the basis of many pathogenetic mechanisms for the development of inflammatory diseases of the maxillofacial area, especially the oral mucosa [84, 85; p.254, 86, 100, 108; pp.663-667, 109; pp.198-211]. In the pathogenesis of purulent-inflammatory processes, the authors identify several main development factors, among which microbial, sensory and solvent factors are especially noted.

In the human body, the pathological effect of pathogenic microbes is mainly associated not only with the formation of toxins in the area of local inflammation, but also mainly with the destruction of gram-negative microflora. Since endotoxin enters the bloodstream and causes several immune reactions of the body, mutual sensitivity of the tissues of the periodontal complex and the activity of lipid peroxidation processes, which in turn leads to damage to tissues and cells by active oxygen ions [15, 47, 89; pp.1712-1721].

Free radical oxidative processes in the cells of the body take place during inflammatory processes in the tissues of the maxillofacial area in pregnant women. These processes lead to softening of the membrane of living cells, which in turn leads to decreased immunity, increases the availability for dissolving enzymes, such as phospholipase and protease, of lipid and protein parts in the membranes of living cells of the tissues of the organs of the maxillofacial region in pregnant women. This leads to damage to the external and internal membrane structures of living cells of the body [58; pp.26-30].

Such pathological processes occurring in the body of a pregnant woman, in turn, lead to a decrease in energy in the woman's body and contribute to an increase in the permeability of the lipid membrane of living cells in the body. Risk factors for the development of purulent-inflammatory diseases of the maxillofacial area in pregnant women, such as hypothermia at low temperatures, overwork at work, stress, acute and chronic trauma of various etiologies, etc. lead to purulent melting of the tissues of the maxillofacial area and have an immunosuppressive effect on the body person [88; pp.74-82, 90; p.161, 106; pp.122-147, 111]. Despite the sufficient equipment of modern treatment and prophylactic institutions, today the treatment of purulent-inflammatory diseases of the maxillofacial area in pregnant women remains an urgent and difficult task in dentistry and medicine in general, as evidenced by the frequency of occurrence and prevalence of this type of pathology. Considering the complexity of the pathological genesis of purulent-inflammatory diseases of the maxillofacial area in pregnant women, the presence of an immune component in the development, treatment and prevention of the inflammatory process of the maxillofacial area, the absence in standard traditional treatment and prevention of drugs with membrane-preserving living cells of the body and an immunomodulatory effect on the general state of the immune system during pregnancy, it is possible to achieve an improvement in the results of our treatments and minimize the risk of relapse and complications of inflammatory processes of the maxillofacial facial area among pregnant women [98; pp.197, 110; pp.7-14, 116; pp].

Maksyukov S.N., Praksadnaya V.A., Chibichyan E.Kh. (2017) studied the periodontal status and peculiarities of the local cytokine interaction of immunity in dynamics in pregnant women with chronic periodontitis. Inflammatory processes in the tissues of the oral cavity, especially inflammatory diseases of the tissues of the periodontal complex of severe severity, can cause a general inflammatory reaction and intoxication in the body of pregnant women. This is primarily due to the fact that anaerobic microorganisms disappear from the periodontium, which leads to bacteremia. Due to fluctuations and changes in the concentration of hormonal status in the blood during pregnancy, women also experience changes in the general status of the woman's immune system. This

causes susceptibility to different types of pathogenic microorganisms. During pregnancy, pathogenic microflora of the oral cavity are activated in women, which in turn is aggravated under the influence of general and local factors. At the same time, the intensity of dental pathologies in the oral cavity increases. Inflammatory mediators become the leading link in the development and course of dental pathologies. Cytokines produced by immunocompetent cells are actively involved in the regulation of inflammatory processes. In pregnant women with moderate HGP, compared with patients with mild CGP, the content of IL-1, IL-6 and Tnfa in saliva increased significantly, by 38.4, 27.3 and 54.9%, respectively, and the concentration of IL-4 decreased on average by 35%. As a result of observation, the authors came to the conclusion that the increased content of pro-inflammatory mediators IL-1, IL-6 and TNFa in the oral fluid of pregnant women with mild and moderate CGP enhances inflammatory and destructive processes during periodontal loss and thus most contributes to the progression of dental diseases [44; pp.19-31, 52].

Disturbances of immune homeostasis during pregnancy complicated by gestosis are much more pronounced, in which gingivitis and periodontitis (Dubrovskaya M.V., Eremin O.V., Savina E.A. 2013) an imbalance of cytokines in the oral fluid predisposes to the development of inflammatory periodontal diseases may serve as an additional diagnostic marker. Other researchers have studied the clinical and immunological features of periodontal health and oral cytokine profiles in pregnant women. The condition of periodontal tissues was studied in 230 women with a physiological pregnancy and 350 women with gestosis. They proved that in case of periodontal damage in pregnant women, disturbances in the cellular communication of the immune system are important. Gingivitis and periodontitis disrupt the pregnancy process, and premature birth is a risk factor for intrauterine infection.

To obtain maximum effectiveness of preventive measures and early detection of inflammatory diseases of the gum tissue and different types and severity of periodontitis in pregnant women, it is very important to develop methods for their general comprehensive diagnosis and measures for their prevention of inflammatory diseases of the periapical tissues in pregnant women.

To increase the efficiency of diagnosis and prognosis of the development of inflammatory diseases of the maxillofacial region in pregnant women, assessing clinical risk factors, many authors recommended using analysis of indicators of cellular immunity (SD3-, SD4-, SD8-, SD16-, SD22-lymphocytes) and TNF content, IL-4, -8 and growth factor - oral fluid P1 [23; p.323-325].

Thus, the formation and course of inflammatory diseases of various origins and the course of tissues of the periodontal complex in pregnant women is determined mainly by the action of many exogenous and endogenous risk factors such as extragenital pathology, decreased immune status of pregnant women and local cytokine balance.

1.4. Treatment and prevention of purulent-inflammatory diseases of the maxillofacial area during pregnancy.

It is known that the course of inflammatory processes in the maxillofacial region in pregnant women largely depends on the ratio of pro- and anti-inflammatory cytokines to the infectious pathogen. There are some studies conducted by scientists around the world on individual cytokines. However, there is no complete picture of the cytokine profile in this pathology in the available literature.

To date, there are no generally accepted promising methods for the local and systemic use of immunotropic drugs in patients of different ages with inflammatory diseases of the maxillofacial region. The study of the cytokine profile and indicators of innate and acquired immunity makes it possible to identify the pathogenetics of the development of severe inflammatory diseases of the maxillofacial region and, on this basis, to develop new pathogenetic approaches to the treatment of patients with this pathology. Because standard treatments are not effective enough, they often do not prevent the development of severe complications that can threaten the lives of pregnant women.

Among the different genesis and course of inflammatory processes in the tissues of the maxillofacial region in pregnant women, the most common are inflammatory diseases of the periapical tissues. The clinical course of these diseases is largely determined by the type and level of the microbial landscape in the oral cavity, as well as the nature and degree of systemic and local immunological and metabolic changes in the body of a pregnant woman [79; pp.35-39, 80; 105 pp., 115; pp.847-855, 139; pp.69-73]. Interest in this pathology is also due to the peculiarities of the anatomy of the area under study; the risk of adverse outcomes is very high, in addition, in 5% of cases there is a transition to a chronic form of the inflammatory process [95; pp.823-832 p].

Despite the fact that there are no local residents and enough equipment in the Manovsky micro district, the treatment of self-destructive spots remains a difficult task, indicating relief from a severe illness. Considering the complexity of the pathological progression of inflammation, the presence of a pronounced immune component in pathological development and progression, the lack of standard drug treatment with immunomodulators and membrane proteins, it is possible to improve treatment results and reduce the risk of chronic inflammation [98; pp.197, 110].

Interleukin-1 (IL-1) is the most reversible of today's pro-inflammatory cytokines in the body's immune response. Pro inflationary cytokines move from minidigon to anti-inflammatory cytokines, which control the immune response of the cell 1, i.e., the ability to form humoral immune reactions-2, 3, 4, 5, 6, 7 and so on. It is also an antagonist of host receptors and cytokines [119; pp.467-481, 120]. Mutation 1 of various receptors (IL - 1ra) is their dependence on the receptors and IL-1 and IL-1 receptors.

The authors studied the ontological status and features of the local cytokine effect of immunity in pregnant women with chronic general periodontitis in the dynamics of pregnancy. In the observed group, it was noted that the concentrations of IL-1b, IL-4, IL-6 and tnfa had a greater gradient than in the control group over the gestational period. In pregnant women with moderate HGD, compared with patients with mild HGD, the content of salivary IL-1, IL-6 and TNFa increased significantly, by 39.2, 27.2 and 55.5%, respectively, and the

concentration of the anti-inflammatory mediator IL- 4 decreased by an average of 34.4%. As a result of observation, the authors came to the conclusion that the increased content of IL-1, IL-6 and TNFa in proinflammatory mediators in the oral fluid of pregnant women with mild to moderate GBS contributed to the progression of inflammatory and harmful processes during periodontal prolapse and the same dental diseases [44; p.29-31].

Thus, the formation of inflammatory and destructive processes in periodontal diseases in pregnant women is determined by the action of a number of exogenous and endogenous factors, such as extragenital pathology, immunosuppression and local cytokine balance. These are connective tissues that are located between the tooth root and the alveolar ridge plate. Healthy alveolar tissue ensures reliable fixation of the tooth in the jaw. This also allows you to load it while chewing food. If the tissues become inflamed, their holding capacity decreases. Accordingly, the condition negatively affects the functionality of the teeth. The periodontium consists of a large number of fibers. They contain a large amount of collagen. This makes them not only durable, but also elastic. With periodontitis, the integrity of the fibers is compromised. The peripheral soft tissues become inflamed. In the absence of timely treatment, this can cause a purulent process, the formation of granulomas, and inflammation of bone tissue. The main cause of a serious disease is the process of decay of nerve tissue with the spread of inflammation to the surrounding ligaments. As a result, toothache and severe tooth mobility appear. At the same time, due to the spread of the infectious process, there is a general increase in body temperature and an increase in regional lymph nodes. At the same time, an asymptomatic course of the disease is possible, when the bone tissue, as a result of inflammation, is absorbed in the apex area and a granuloma is formed in its place. It looks like a “bag” at the top of the root. Sometimes inflammation occurs at the site of the granuloma, that is, a cyst is formed. In order to save a tooth in this situation, long-term treatment will be required, sometimes up to a year. In addition, it is worth considering that, as a source of infection, periodontitis can lead to glomerulonephritis, rheumatism and damage to the heart valve system. First of all, these are inflammatory processes involving the periodontium. For example, this may be an increase in the depth of the periodontal pocket. The resulting pain makes hygiene difficult. Bacteria multiply in the pocket,

which can penetrate into deeper tissues and cause inflammation. Pathologies accompanied by an increase in saliva viscosity are also important. It is no longer able to thoroughly wash the surface of the teeth, which increases the risk of caries and inflammatory gum diseases. In more rare cases, the development of periodontitis is possible due to infection from a nearby focus, for example, purulent inflammation in the oral mucosa or a boil on the face or in the neck area. Any carious cavity is a source of infection and requires treatment. Caries spreads quickly and within two weeks from the moment the cavity forms, it becomes chronic. Periodontitis can be provoked by advanced forms of caries, all types of pulpitis and acute inflammation of the mucous membrane. Sometimes periodontitis develops sometime after root canal treatment. It is caused by the filling paste moving beyond the apex, incomplete cleansing of the canals, or missing one of them. May cause non-infectious inflammation. As a rule, it is caused by immediate injuries. A blow to the root area, displacement of a tooth during a sharp bite, or an attempt to split a hard object with teeth can cause injury to periodontal tissue and, as a result, inflammation.

CHAPTER II. CLINICAL CHARACTERISTICS OF THE PATIENTS EXAMINED MATERIAL AND METHODS OF RESEARCH.

The study involved 250 pregnant women aged 18 to 38 years (average age 24.5±34.4 years)

The criteria for inclusion in the study were: pregnant women attending an outpatient dental appointment for the treatment of inflammatory diseases of the periapical tissues and its complications, as well as those hospitalized with various types of odontogenic inflammatory processes in the maxillofacial area.

The criteria for exclusion from the study were non-pregnant women, children under 18 years of age, and men.

At the adult surgical dentistry clinic of the Tashkent State Dental Institute, pregnant women were provided with therapeutic and surgical dental care both on a planned and emergency basis. Dental care for pregnant women was provided by trimester, taking into account the characteristics of each period both from the body of the expectant mother and the fetus.

Frequency of visits of women to dentists at different stages of pregnancy (planned and emergency).

	Number of patients		
	I trimester	II trimester	III trimester
As planned	70	50	75
Urgently	20	25	20
Total	90	75	95

In the first trimester, 165 women sought routine care for urgent reasons. In the second trimester, 75 patients were provided with emergency dental care in

accordance with a previously drawn up treatment plan and the patients' need for sanitation. In the third trimester, dental care was provided to 95 pregnant women on an emergency basis.

To examine the condition of the tissues of the oral cavity and register the data obtained, a method developed by WHO experts was used, with all the results obtained being entered into the "Card for assessing dental status in adults" (2013).

During the examination of patients, complaints from pregnant women were analyzed (the presence of bleeding, tissue swelling, bad breath (halitosis), the presence of dental deposits in the form of hard plaque and tartar, pathological mobility of teeth, high hyperesthesia of hard dental tissues to temperature and chemical stimuli, pain when eating), causes of the development of the disease (time of appearance of the first symptoms, nature of the disease: relapses, their occurrence and duration of remission, concomitant diseases (relationship of systemic diseases with diseases of the oral mucosa and periodontal tissues), age of the patient, heredity, presence bad habits, existing dental hygiene equipment, etc., as well as the patient's hygiene skills.

Visual examination of oral tissues - measurements of the depth of the vestibule, the presence of short frenulum's of the upper and lower lips and tongue, assessment of the condition of the tissues of the periodontal complex and mucous membranes of the oral cavity, the state of the oral mucosa (color, bleeding, consistency with the main tissues, the presence of edema, aphthae and ulcers, plaque on the tongue), the presence of carious cavities, the quality of fillings and dentures.

2.2. Methods of examining patients. Questioning.

To study the relationship between the dentist and patients as a factor determining the effectiveness of preventive medical work in dental practice.

An analysis of a sociological survey of the disposition of the attitude of dentists of a consultative clinic to their profession and of patients in relation to the prevention of the health of the body was carried out.

The main body of clinical and sociological information was obtained as a result of a survey of dentists from advisory clinics of the city and from dental

surgeons in specialized clinics at the clinical bases of the Tashkent State Dental Institute and patients who had recently started a family, pregnant women.

The results of a survey of 42 dentists were analyzed, including 12 dentists from consultative clinics, 24 dental surgeons from specialized clinics, and 6 maxillofacial surgeons from hospitals.

The results of a survey of 203 patients who underwent a medical examination before marriage in family advisory clinics were simultaneously analyzed; outpatient records of 192 patients: of which 128 (67%) were pregnant women at various stages (by trimester) and 64 (43%) married non-pregnant patients of a specialized surgical dental clinic. An analysis of 131 medical histories of inpatients was carried out,67 (51%) of whom were pregnant and 64 (49%) were non-pregnant women who got married.

2.3. Determination of the cytokine profile of blood plasma and oral fluid.

To determine and evaluate the cytokine profile of blood plasma and oral fluid (saliva), we conducted immunological studies using enzyme-linked immunosorbent assay (ELISA). To conduct these studies, we used a set of standardized special reagents from Vector-Best JSC (Russia) to quantify the content of pro-inflammatory cytokines (interleukins, IL) that cause inflammation associated with its occurrence: IL-Iα, IL-Iß, IL-8 , TNF-α.

The research materials are fluid from the oral cavity of all patients with inflammatory processes of the periapical tissues. As normal values, we used the data of the cytokine profile of blood and oral fluid in the examined patients of the control group without dental pathologies associated with complicated forms of diseases of the hard tissues of teeth, with intact periodontium.

Oral fluid was collected from patients with inflammatory diseases of the periapical tissues before and after treatment. Oral fluid was collected early in the morning without stimulation of the salivary glands, after rinsing the mouth with 0.9% (NaCl) saline. By using a sterile syringe (without a needle), saliva was sucked out in the sublingual area (1 ml), then the oral fluid was cleaned by centrifugation on the apparatus

"Biosan" (Latvia) for 10-15 minutes at 3000 rpm. and temperatures from 18 to 25 °C, the oral fluid was transferred in an Eppendorf tube and stored at -20 °C until analysis. Repeated thawing and freezing of oral fluid samples is not permitted. After thawing, samples should be mixed thoroughly.

ELISA results were expressed in arbitrary units - pg/ml.

The determination method is based on a solid-phase “sandwich” - a version of an enzyme-linked immunosorbent assay using mono- and polyclonal antibodies to IL-Iα, IL-Iß, IL-8, TNF-α. In the wells, when the test sample of oral fluid is added, during the first incubation, IL-Iα, IL-Iß, IL-8, TNF-α bind to monoclonal antibodies immobilized on the inner surface of the wells.

Unbound material is removed by washing. Bound IL-Iα, IL-Iß, IL-8, TNF-α interact during the second incubation with the conjugant

№1 (biotinylated antibodies to human IL-Iα, IL-Iß, IL-8, TNF-α). Unbound conjugant No. 1 is removed by washing. At the third stage, the bound conjugant No. 1 interacts during incubation with the conjugant

№2 (streptavidin-horseradish peroxidase). During incubation with a tetramethylbenzidine solution, the solution in the wells becomes colored. The degree of coloring is directly proportional to the concentration of IL-Iα, IL-Iß, IL-8, TNF-α in the analyzed samples.

To work with the kit, a “Stat Fax 2100” photometer (Awareness Technology) was used, which allows measuring the optical density of solutions in strip wells in a dual-wave mode: with a main wavelength of 450 nanometers and a reference wavelength in the range of 620-655 nanometers.

Repeated sampling of oral fluid from the oral cavity of the subjects to determine the content of pro-inflammatory cytokines causing inflammation associated with its occurrence - IL-Iα, IL-Iß, IL-8, TNF-α was carried out after treatment. In the control group, material for the study was collected once at the first visit.

We carried out the quantitative determination of lactoferrin in the oral fluid of pregnant women by enzyme-linked immunosorbent assay (ELISA) using a standardized special set of reagents “Lactoferrin-Strip” (Russia).

2.4. Characteristics of treatment methods.

It is known that only a doctor selects treatment tactics and medications. During pregnancy, there are certain restrictions regarding the use of antibiotics, antivirals and some other drugs.

The tactical scheme of traditional treatment of acute and chronic apical periodontitis consisted of a set of measures, the main components of which were primary or secondary surgical treatment of the purulent focus with removal of the causative tooth with adequate drainage, antibacterial, detoxification and desensitizing therapy, as well as measures aimed at restoring the homeostasis of the main functional body systems.

Depending on the treatment and preventive measures taken, all patients were divided into 2 groups:

Group 1 (traditional treatment) - 24 pregnant women who, against the background of traditional drug treatment, after opening the purulent focus, were irrigated using a solution of furacillin and the drug "Amibactam" 1.5 g every 6 hours, i.v.

Group 2 (complex treatment) - 24 pregnant women who, in addition to traditional treatment, underwent opening of a purulent focus with bone perforation, irrigation of the wound using ESSENS® rinse and the drug "Amibactam" 1.5 g every 6 hours, i.v.

2.5. Statistical processing methods.

Statistical data processing was carried out on a personal computer using the EXCEL, 2010 package using statistical functions and Statistics 7.0 (Stat Soft, USA). The significance of differences in parameter values was determined using t-Student criteria. Chronic injuries can also lead to it. They often occur in smokers when a pipe is used that constantly puts pressure on the same tooth. The same goes for the habit of holding a pen in your mouth. It also constantly puts pressure on the root part. The likelihood of developing periodontitis increases in people of certain professions: for example, brass band musicians may experience inflammation due to constantly increased pressure in the oral cavity. The same goes for seamstresses who hold needles with their teeth or bite threads. This can also cause tissue inflammation. The severity of the signs of the disease depends on what stage of development the pathology is at. Acute is characterized by pronounced signs of inflammation, while in

chronic cases complaints may be completely absent. Most often, symptoms appear during an exacerbation. Pain in the area of the causative tooth. At first the pain is weak; it is difficult to determine exactly where it hurts, since the sensations are “diffused”. Later, the pain increases and becomes unbearable. The pain intensifies when touching a tooth or while chewing food. It feels like the tooth has grown and become taller, since when closed, pain occurs in the area where the antagonist teeth come into contact. A large cavity is revealed in the tooth. Previously, the patient may have suffered from manifestations of pulpitis, which were suppressed by taking medications. In the projection of the root apex, tissue swelling is possible. A doctor can detect it using an X-ray examination. With the development of a purulent focus, the contents find their way out, resulting in the formation of a fistulous tract in the area of the apex projection. It looks like a small ball on the gum, which subsequently opens, resulting in pus coming out. The tooth no longer reacts to temperature stimuli, sour or sweet, but pronounced mobility appears due to the accumulation of exudate in the periodontal area.

CHAPTER III. RESEARCH RESULTS.

3.1. Results of a retrospective analysis of medical documentation data

According to archival data for three years (2017-2019), an analysis of 67 case histories of hospitalized pregnant women aged 19 to 44 years with various types of odontogenic inflammatory processes of the maxillofacial area, and 128 outpatient records of pregnant women with various inflammatory processes of the periapical tissues of the dentofacial system. A statistical analysis of case histories was carried out depending on the severity of inflammatory processes in the maxillofacial region at different stages of pregnancy and the surgical and conservative interventions performed in different locations.

On the basis of the adult surgical dentistry clinic of the TGSI, an analysis of 67 case histories of hospitalized pregnant women with odontogenic inflammatory processes treated for 3 years was carried out, of which 24 women were in 2017, 21 in 2018 and 22 were pregnant in 2019. Diagnoses and types of operations performed are presented in Table 3.1.

According to Table 3.1, within 3 years, of the hospitalized pregnant women with odontogenic phlegmons of the maxillofacial region of various locations, there were 34 (51%) patients; 17 (26%) pregnant women were hospitalized with odontogenic abscesses, periostotomy of a diffuse nature was carried out in 9 (13%) pregnant women, 5 (7.5%) pregnant women were treated with various infiltrations and acute serous lymphadenitis.

From the case histories, based on a detailed statistical study of the results of biochemical tests, it was revealed that out of 67 (100%)hospitalized pregnant women, in accordance with the processes of inflammation, in addition to a shift in the leukocyte formula, a decrease in hemoglobin content was observed in 99.5%. Of all patients, mild anemia occurred in 38%, moderate anemia in 43%, and severe anemia in 18.5% of pregnant women.

Distribution of hospitalized pregnant women with odontogenic inflammatory processes in the department of adult surgical dentistry of the TGSI for 2017-2019.

№	Diagnosis	Type of operation	Number patients	%
1	Phlegmon of the maxillofacial area (various locations)	Opened phlegmon	34	51
2	Abscesses of the maxillofacial area (various locations)	Opened abscess	17	26
3	Periostitis of the jaws	Periostotomy	9	13
4	Osteomyelitis of the jaws	Sequestrectomy	2	2,5
5	Infiltration and lymphadenitis of the maxillofacial area	Complex treatment	5	7,5
	Total:		67	100

When planning an appointment with a dentist, you should avoid critical periods (trimesters) of pregnancy, that is, risks: while taking into account the possibility of miscarriage or premature birth in pregnant women. At this time, any slightest endo or exco-irritants can cause contraction of the uterine muscles in pregnant women, which can lead to its strong contraction and ultimately can lead to miscarriage or premature birth in pregnant women. Observation of pregnant women who were hospitalized during their hospital stay for the treatment of

inflammatory processes maxillofacial region, premature birth was observed in 12.0% of all pregnant women.

Monitoring of pregnant women who applied in the period 2017-2019 was carried out at the surgical dentistry clinic of the Tashkent State Dental Institute. Analyzed 128 outpatient records of pregnant women with various types and severity of odontogenic inflammatory processes of the maxillofacial system. Statistical analyzes of diagnoses and performed manipulations are presented in Table

Distribution of pregnant women who applied for an outpatient appointment with odontogenic inflammatory processes at the surgical dentistry clinic of the TGSI for 2017-2019.

№	Diagnosis	Type of operation	Number patients	%
1	Pericoronaritis	Pericoronarotomy, removal of a tooth	11	8,8
2	Exacerbation chronic periodontitis	Removal of a tooth	62	4,8
3	Periostitis of the jaws	Periostotomy, removal tooth	19	14,5
4	Lunula osteomyelitis (alveolitis)	Sequestrectomy, curettage of the tooth socket	7	5,4
5	Infiltrate and lymphadenitis of the maxillofacial area	Complex drug treatment	19	14,5
6	Periodontitis, gingivitis, periodontal disease	Removal of a tooth, complex treatment	8	6,6
7	Odontogenic sinusitis	Complex treatment	2	1,3

	Total:	128	100

According to Table 3.2, the percentage of outpatient appointments with exacerbation of chronic periodontitis during 3 years was 62 (48.0%) pregnant women. 19 (14.5%) women were diagnosed with odontogenic periostitis of the jaws; 19 (14.5%) pregnant women sought help from a dental surgeon with various inflammatory infiltrations of the maxillofacial area.

Based on a study of outpatient medical records, 86% of women during dental examinations of pregnant women were not examined and treated in a quality manner; there were “false certificates.” According to the results of statistical analysis, it was revealed that out of 128 (100%) pregnant women who applied after outpatient surgical interventions, during dynamic observation, 21 (15.8%) women were identified who were hospitalized in the hospital with various types of purulent-necrotic complications of the maxillofacial area.

Thus, based on the results of the monitoring, we can conclude that visits from pregnant women to a dental surgeon accounted for a significant number of the total number of patients who sought medical help.

3.2. Results of clinical research methods.

To solve our problems, from 2018 to 2020, we observed 92 women with inflammatory diseases of the periapical tissues aged 18 to 40 years. All examined patients were informed about the examination methods and planned treatment, and they gave consent.

The study was carried out taking into account the protocol of international ethics with the consent of the obligatory purpose of the patients, starting with the signature of the patients (attachment to the patient's outpatient medical history) in the form of voluntary informed consent of the patients.

The effectiveness of diagnosis, follow-up and treatment was determined by clinical, radiological and immunological research methods.

During the first visit, complaints were identified, anamnesis was collected and additional methods were applied, including clinical and instrumental examination.

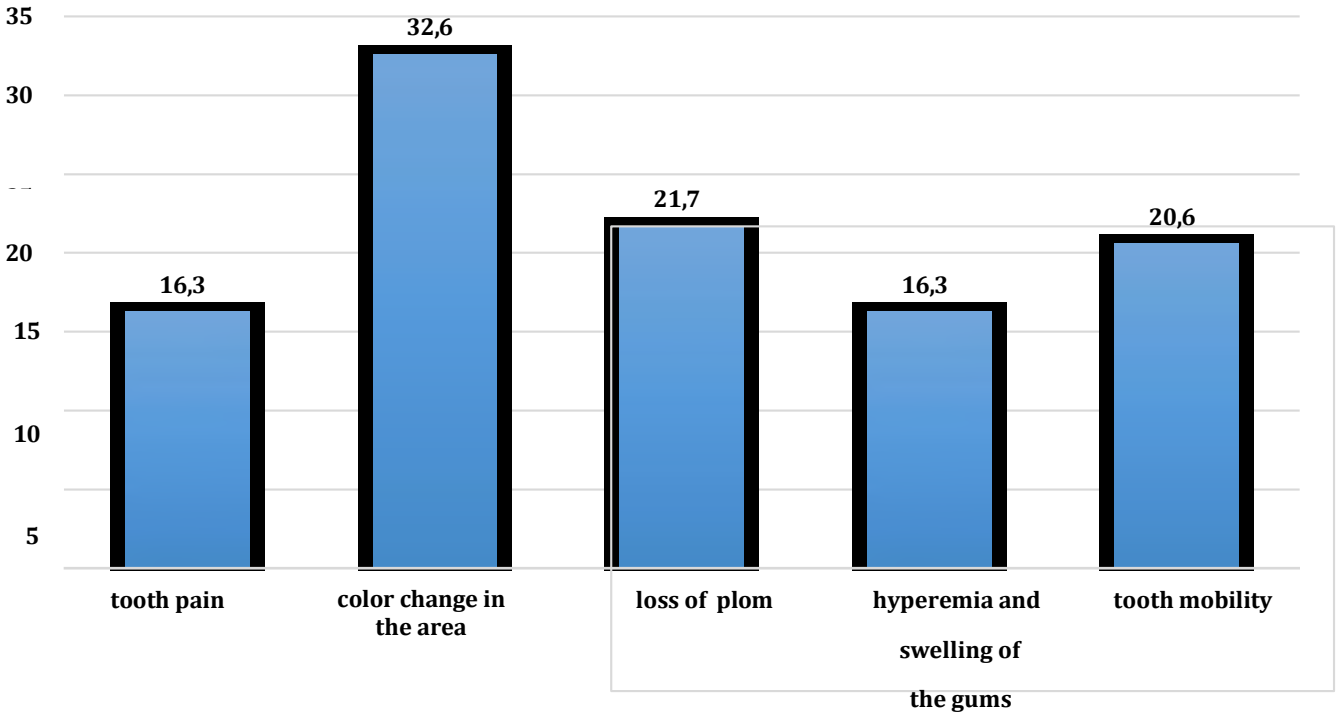


Fig.3.1. Results of clinical and instrumental examination.

16.3% of the examined patients complained of pain when eating, the presence of a fistula in the gum area of the teeth, 32.4% of discoloration of the crown of the teeth; 21.6% for loss of previously placed permanent fillings (restorations); 29.1% were referred by a prosthodontist to prepare teeth for supporting orthopedic structures. In some cases, after treatment of the causative tooth for several years, patients experienced relapse and exacerbation of the chronic inflammatory process.

During an external visual examination, the facial relief of the patients was unchanged, the skin was physiologically colored, the regional lymph nodes were not enlarged, palpation was painless.

During a clinical examination, hyperemia of the tissues of the periodontal complex and swelling of the gums in 16.2%, a change in the color of the crown of the tooth and a violation of the integrity of the crown of the teeth in all pregnant women, tooth mobility at the I-II level was 20.5%, pain on probing and percussion , comparative percussion in the surveyed contingent was 33.5%.

At the stage of the X-ray examination, it was important for all main patients to determine the condition of the patient's teeth, determine orthopantomography, as well as chronic odontogenic infections based on their asymptomatic course.

Targeted radiovisiography was used for all examined patients, who had variability of different shapes and sizes of foci of destruction in the periapical tissues. The sizes of foci of pathological destruction were observed from 3 mm to 9 mm.

As a result, teeth with lesions in the periapical region are detected on the target digital x-ray in all patients. Of the 92 women examined, 50 (55.4%) were radiographically similar to patients with an unclear contour and focal cones, which met the diagnostic criteria; In 41 patients (44.5%), an even, clear contour of the focus of bone destruction in the area of the apex of the tooth root was determined radiographically.

48 patients (52.2%) underwent volumetric dental computed tomography to determine the localization of pathological foci and the severity of tissue changes in the periapical zone.

3.3. Cytokine profile of blood plasma and oral fluid in pregnant women with odontogenic inflammatory diseases.

Odontogenic disease of pregnant women, leading to intrauterine infection of the fetus, occurs mainly in the subcutaneous form, which significantly complicates the diagnosis of this type of pathology in pregnancy period. Published statistics show that more than 2/3 of early babies, from 27 to 36% of children, are born alive, including those infected in utero. Infectious pathology in the structure of newborn mortality is the reason that from 11 to 45% are stillborn. In pregnant women, the incidence of spontaneous miscarriage and premature birth increases as a result of odontogenic infection. At the same time, special therapy aimed at removing the pathogen from the body is often ineffective or has a temporary effect and in 30-50% of cases leads to relapse of the disease. The inflammatory genesis of pregnancy depends on the individual characteristics of the penetration of microorganisms from the mother's blood into the fetus through the placenta. The presence of the microorganism in the mother may be accompanied by characteristic symptoms of an asymptomatic or inflammatory disease. Often the

pathogen passes through the placenta, causing the development of placentitis with certain histopathological changes.

Any violation of the continuity of the internal environment of the body, regardless of the nature, time and strength of the pathogen, is an extreme case for the immune system. In the event of a disturbance in the stability of the internal environment, the scenario for the development of immunological phenomena is approximately the same, with a small cut of the skin and large wounds. The healing process involves cells of the same type of immune system; these are approximately the same stages in the deployment of protective reactions of the same mediators synthesized by the cells.

In 2005, Oppenheim and Yang proposed that the signaling molecules for the immune system and its activator be called alarmin. Characteristics for signaling devices:

1. Rapid release in response to infection or tissue damage.
2. Chemotactic and stimulatory effects of AG-sensitive cells (APC).
3. Immunostimulant effect In vivo.

Alarmins include defensins and the cytokine IL-1P, as well as some peptides and lipid metabolites. The definition of alarmins as endogenous activators of innate immunity is more acceptable, since it combines all substances that stimulate various lines of the immune system.

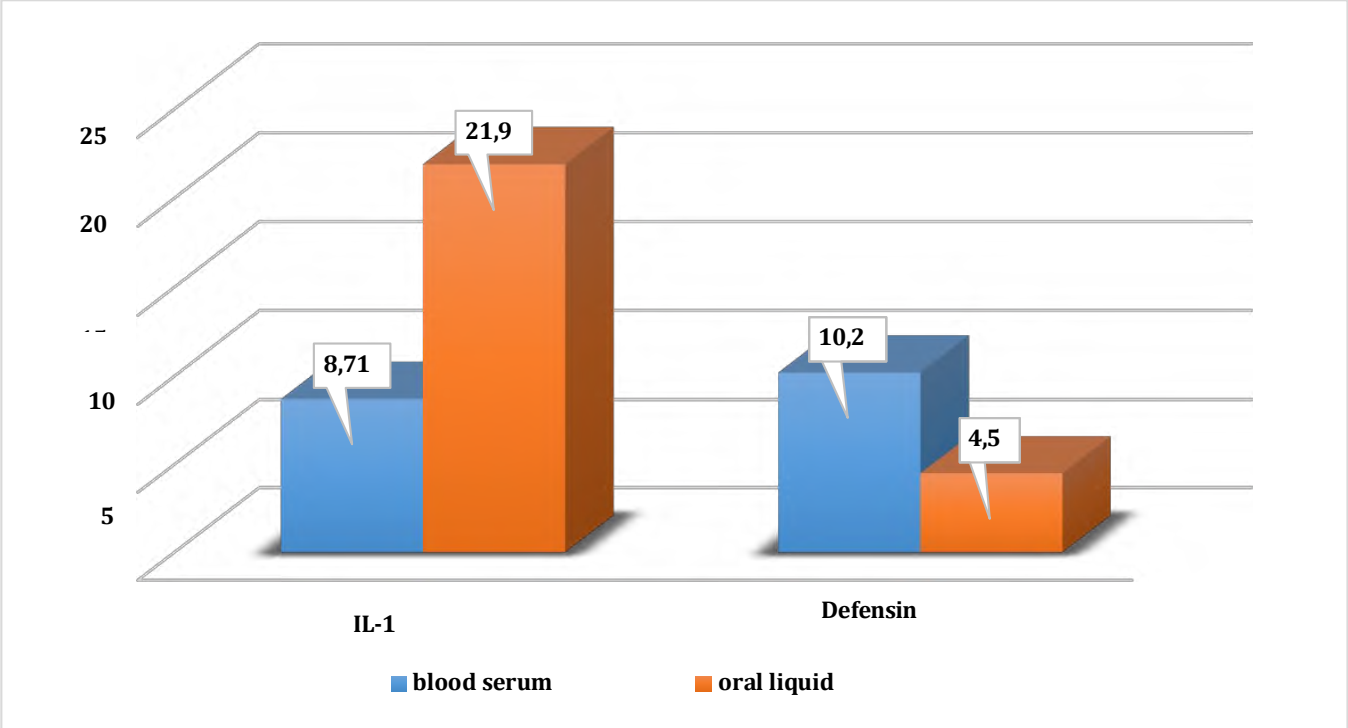
In this regard, a number of methods have been developed for determining the content of the following alarmins in human biological fluids: interleukin-1B and defensins to assess the state of the mucous barrier in inflammatory diseases of the oral cavity.

A-Defensins consist of a large family of rich cationic antimicrobial peptides, low molecular weight (4-kd), capable of killing a wide range of pathogenic microorganisms, including various bacteria, fungi and crustacean viruses.

The main source of α-defensins in the human body are neutrophils. In addition, they are found in lymphocytes, neutrophils and monocytes. A certain amount of diphensin may be present in the free state in the circulating blood.

In addition, diphenism is found in saliva, milk, nasal secretions, tears, semen, urine, sweat and other biological fluids, but in varying concentrations. A decrease

or absence of the product, as well as a change in the activity of antimicrobial peptides lead to increased sensitivity of the microorganism to microorganisms and the development of the disease.



The state of the oral defense system in the women examined was accompanied by a serious disruption of immune defense mechanisms, manifested by local changes in the cytokine profile.

One of the key links in the disruption of the oral immune system is the inflammatory mediator interleukin-1 (IL-1). IL-1 stimulates the production of adhesive molecules by endothelial cells of the body, which in turn promotes the attachment of monocytes and polymorphonuclear granulocytes, as well as the mobilization of these cells to the area of the inflammatory process.

Proinflammatory cytokines (IL-1) stimulate the production of matrix metalloproteinases, reduce the production of tissue inhibitors of metalloproteinases, and stimulate the activity of the cytokine system for bone tissue repair.

An imbalance of cytokines in oral fluid can serve as an additional diagnostic and prognostic sign of the severity of inflammatory periodontal diseases in pregnant women. As can be seen from the research results presented in Fig. 3.1. the content of IL-1 in the blood serum was higher on average by 3.3 times in relation to the data in the oral fluid, while in the oral fluid the degree of increase in this interleukin is 2 times. Similar dynamics were noted regarding the content of defensin in the studied samples. Thus, the level of defensin in the blood serum of women cyclically increases by 56%, and in the oral fluid increases by an average of 1.9 times. In general, we see an increase in the studied alarmins in the blood serum and oral fluid of the subjects, which indicates the mobilization of a pro-inflammatory cytokine and antimicrobial peptide against the background of a stressful situation.

The role of the oral mucosa in the implementation of immune function is explained by the fact that most antigens enter the body of a pregnant woman and overcome this physiological barrier. This allows us to understand the importance of the oral mucosa in inflammatory diseases of the periapical tissues as part of the body's intraepithelial immune system. As an entry point for antigens, the oral mucosa is an essential part of the body's overall immune system. The oral cavity, on the one hand, is ideally suited and there are optimal conditions for the reproduction and activity of pathogenic microorganisms with insufficient temperature, pH, humidity and availability of nutrients, on the other hand, the epithelium of the oral mucosa is favorably characterized by acidic and alkaline pH, on the other hand, micropinocytosis is most often represented by microorganisms. Various immunological indicators of oral fluid are of great importance in the prevention of inflammatory diseases of periodontal tissues and hard dental tissues. A special place among them is occupied by the determination of sIgA. Determining these indicators makes it possible to assess the state of local protective centers of the oral cavity and indirectly characterize the state of the immune system. sIgA levels were associated with the severity of dysbiosis. The IgG concentration increased due to worsening levels of dysbiosis. Thus, S-iga, the main component of the mucosal barrier, ceases to effectively perform the biological function of the oral cavity [124, 125, 127]. Decreased mucosal

immunity is associated with dysfunction of the mucous membrane, a decrease in the total concentration of saliva iga and the absence of s-iga and lactoferrin in the ductal salivary gland of the parotid gland. Some authors note that the short-term increase in SIAG is most likely compensatory in nature. Thus, the state of immunity of the oral mucosa is an important indicator characterizing the state of the tissues of the periodontal complex and the oral cavity as a whole. According to numerous publications, changes in the level of s-IgA during inflammation in periodontal tissues are of the same nature: the concentration of s-IgA decreases in the oral fluid and increases with a decrease in the inflammatory potential; this indicator can be used to assess the effectiveness of therapy. Currently, the study of cellular defense factors involved in the inflammatory process of the oral cavity is taking place among pregnant women.

Table 3.3

Dynamics of the level of s-IgA and cytokines in the oral fluid in pregnant women with odontogenic inflammatory diseases of the maxillofacial area.

Indicators	Control n=20	Pregnant women with odontogenic inflammatory diseases of the maxillofacial area n=30
sIgA (mg/mg protein)	252,27±14,53	175,58±12,43*
IL-2 (pg/mg protein)	113,86±9,34	100,25±8,67*
IL-6 (pg/mg protein)	310,76±13,78	1498,22±17,23*
IL-8(pg/mg protein	368,48±13,62	5609,3±18,72*

Note: *- differences when compared with control $p<0.05$

Analysis of the data presented in Table 3.3 indicates that in the examined women the level of mucosal immunity - sIgA decreased by 30%; IL-2 levels decreased by 12%. Regarding the pro-inflammatory cytokines IL-6, 8, different dynamics are observed: the level of IL-6 increased by 4.8 times, IL-8 by 15 times.

Assessment of oral mucosal immunity shows a significant decrease in sIgA. A decrease in the level of IL-2 in the oral fluid, accompanied by a deficiency of SIAG, can be considered as a negative factor that contributes to the formation of chronic inflammatory periodontal diseases and contributes to the development of destructive processes in bone tissue. An assessment of the dynamics of the values of pro-inflammatory cytokines IL-6 indicates high activation of the macrophage system, which leads to the synthesis of acute phase reagents containing C-reactive protein, transferrin, and ceruloplasmin.

Thus, the results of a comprehensive assessment of the condition of pregnant women indicate the combined impact of unfavorable factors on the tissues of the oral cavity, namely: a low level of hygienic condition of the oral cavity, a decrease in the functional activity of the salivary glands, changes in secretory properties, in particular, the surface tension of saliva; inhibition of local mucosal immunity of the oral cavity; increased levels of microbial contamination**.** Apical periodontitis of a tooth is an inflammation of the apex of its root. The disease affects the tissues surrounding the root (periodontium) and the adjacent bone structure. Inflammation, which eats away soft tissues and leads to atrophy of the jaw bones, is the main complication of apical periodontitis. IBC (international statistical classification) classifies periodontitis as diseases of the pulp and periapical tissues (K04). Causes of apical periodontitis. Periodontitis most often occurs for three reasons:

1. Infection. Untreated caries destroys dentin (the hard tissue of the tooth under the enamel) and allows bacteria to access the pulp. This is a neurovascular bundle, which we often call a nerve. When the pulp becomes inflamed, pulpitis develops. The acute form is painful, and is usually treated immediately by a doctor. Chronic pulpitis tends to either fade or flare up. Each time the patient hopes for recovery, he postpones his visit to the dentist. As a result, inflammation spreads, involving periodontal tissue.

2. Trauma. May be the result of a one-time impact, such as falling from a bicycle. Constant traumatic effects occur due to incorrect prosthetics, increased load, missing adjacent teeth, or bad habits such as wire biting.

1. As a result of poor-quality canal treatment. If there are unfilled voids left in the root canals, bacteria will certainly begin to develop there. When treating pulpitis, potent drugs (formaldehyde) may enter the periodontium. An incorrectly installed pin also causes apical periodontitis. Pathogenesis depends on the etiology, but most often microbes penetrate through the root canals, completely destroying (necrotizing) the pulp. According to the nature of the flow, they are distinguished:

1. Acute apical periodontitis. It develops quickly and the symptoms are pronounced. The main one is pain. Usually, in acute cases, patients immediately turn to the dentist. It can be serous and purulent.

2. Chronic apical periodontitis. Symptoms are vague, improvements and deteriorations alternate. The process can take years. There are fibrous, granulomatous and granulating forms.

3. Exacerbation of chronic. Usually the chronic process does not cause the patient any discomfort, but with a cold, flu, or hypothermia, the symptoms become more pronounced. Pain and swelling are characteristic signs of such apical periodontitis. Exacerbation helps diagnose the chronic form.

Symptoms of apical periodontitis, different forms of inflammation manifest themselves in their own way. The acute serous form is characterized by:

• pain that intensifies when biting;

• swelling, which creates the feeling of an “overgrown tooth”;

• no changes in the image.

In acute purulent form, the patient feels:

• throbbing pain, with short breaks;

• gum swelling;

• tooth mobility due to pus corroding the ligaments;

• swelling.

Chronic fibrous periodontitis does not cause any symptoms. It is discovered by chance, from a photograph. There you can see how fibrous tissue displaces periodontal fibers.

Chronic granulating periodontitis causes aching pain. Pressure on a tooth is painful. Often a fistula forms on the gum, through which pus comes out. The photo shows the darkening of the root. This means that there is no more bone tissue there, only granulation tissue.

With chronic granulomatous inflammation, a granuloma forms at the root apex, which can increase in size and become a cyst.

The formation is a bag of pus.Based on the information provided by the patient, the dentist notes the following points: the nature of the complaints, the duration of symptoms, recent dental treatment.

During a clinical examination, the doctor pays attention to redness, swelling of the mucous membranes, the presence of tumors or fistulas. Checks the quality of prosthetics or fillings. Uses palpation (pressure) and percussion (tapping).

3.4. Antimicrobial immunity of oral fluid in pregnant women with odontogenic inflammatory diseases of the maxillofacial area.

The results of determining the level of lactoferrin in saliva in patients of the clinical groups and in the comparison groups are reflected in Fig. 3.3.

In a study of healthy non-pregnant women, the mean and mean selective concentrations of lactoferrin in saliva were found to be 1.03 mcg/ml and 1.12 ± 0.05 mcg/ml, respectively, with an interquartile range of 0.76-1.45 mcg/ml (Fig.3.3).

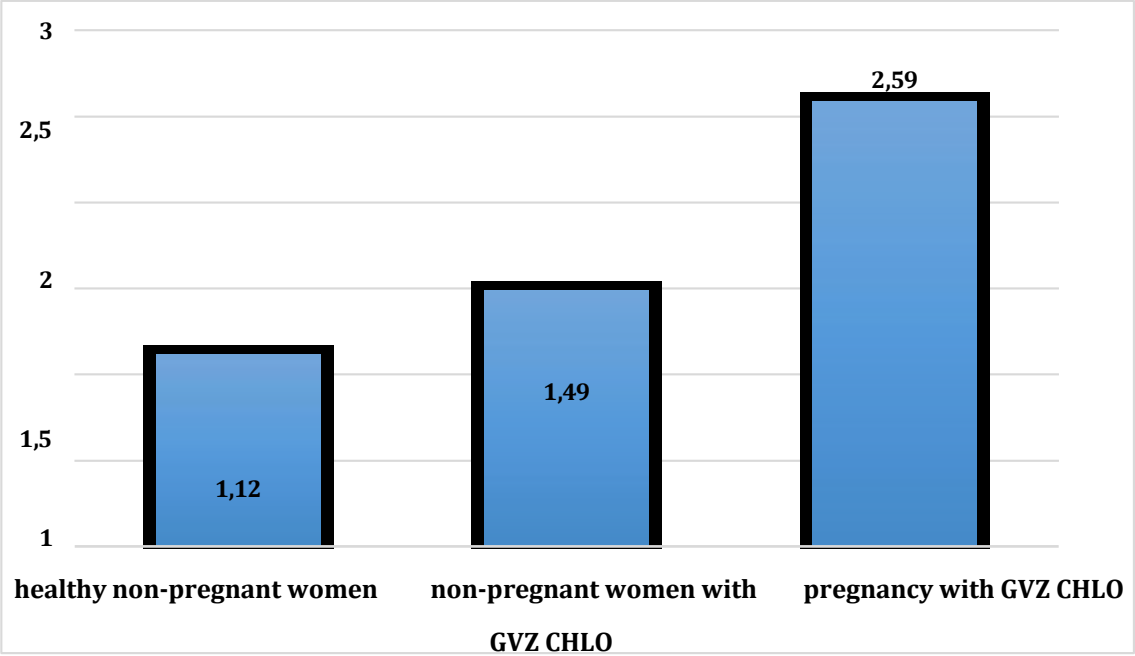


Fig.3.3. Lactoferrin content (µg/ml) in the saliva of women from clinical groups.

In all three trimesters, the level of lactoferrin in women with physiological pregnancy in the absence of a purulent process was significantly higher than in the group of healthy non-pregnant women ($p<0.05$), and increased without problems in the first and third trimesters of pregnancy.

With phlegmon of the maxillofacial region, the level of lactoferrin, which performs a wide range of antimicrobial and immunomodulatory functions in saliva, was significantly higher in pregnant and non-pregnant women compared to patients with phlegmon. The most noticeable increase in lactoferrin was observed in the third trimester of pregnancy.

Thus, the level of lactoferrin, which performs a wide range of antimicrobial and immunomodulatory actions in saliva, was associated with pregnancy itself, the duration of the gestational period, and the presence and duration of the purulent process. Moreover, the connection between these phenomena was direct. Throughout physiological pregnancy, an increased concentration of lactoferrin is observed in saliva. As the purulent process continued, the level of lactoferrin in saliva increased with a large gradient. The antimicrobial mechanism of lactoferrin may lead to conjugation that is established between progression and progression of the process and an increase in the level of peptides in the oral fluid. Thus, lactoferrin in oral fluid can be considered not only as a sign of inflammation in the oral cavity, but also as a sign of the negative course of the inflammatory process in the maxillofacial area during pregnancy.

Thus, the level of lactoferrin in the saliva of pregnant women is higher and increases by the third trimester of the gestational period, and the development of the inflammatory process is accompanied by an increase in lactoferrin in the oral fluid, and this phenomenon is associated with a significant increase in the level of lactoferrin in the blood.

CHAPTER IV. COMPARATIVE ANALYSIS OF THE RESULTS OF TREATMENT OF PREGNANT WOMEN WITH PUROPENTAL-INFLAMMATORY DISEASES OF THE MAXILLOFACIAL AREA

4.1. Analysis of treatment results for study patients using a clinical research method.

In this chapter, a comparative study was conducted on the clinical effectiveness of hot water treatment in 92 patients depending on the treatment.

To objectify the results obtained, 92 patients with chronic forms of periodontitis were divided into 2 equal subgroups:

Subgroup 1, n=46 people (50%), included patients who received hot water according to the complex treatment regimen we developed.

In subgroup 2, n=46 people (50%), with hot water, who were treated with the traditional method.

The effectiveness of treatment of patients and their follow-up were assessed based on the results of clinical and radiological studies within 6 and 12 months after the start of treatment.

A study of direct and indirect clinical results after treatment (within 14 days) showed that 46 out of 10 examined patients (21.7%) in the first subgroup experienced slight painful palpitations, which disappeared on their own after 2-3 days.

Clinical results in patients 46 showed that the second subgroup who received standard treatment complained of painful percussion and aching pain for two weeks in patients 15 (32.6%).

Based on the results of a clinical and radiological study, to assess the effectiveness of treatment for patients over 6 and 12 months, we determined the following criteria:

1. Effective treatment, complete and partial restoration of radiological changes in the absence of clinical manifestations and complications.

2. Relatively effective treatment, preservation of radiological changes without clinical manifestations and complications.

3. Treatment of exacerbation of the disease with radiological changes is ineffective.

In 6 (44%) patients of the first subgroup there were no clinical manifestations 95.65 months after endodontic treatment, radiological dynamics were positive, in 2 (4.35%) patients without clinical manifestations, the foci of periapical tissue absorption decreased, but radiological changes in the periapical areas continued.

In the second subgroup of 32 (69.56%) patients there was no clinical picture and positive radiological changes were noted; in 8 (17.39%) patients there was no clinical picture, radiological changes persisted. In 6 (13.05%) patients there were signs of worsening radiological condition.

In the first subgroup, after 12 months, the clinical picture was absent in all patients, with the exception of one clinical case; radiological changes were partially preserved (reduction of the lesion by 50%).

In the second subgroup, after 12 months, 33 (72%) patients had no clinical picture and refractory centers of the bone structure were noted on the radiograph, stagnant tissues were not completely restored in 5 (11%) patients, exacerbation of the disease was observed in 8 (17%) patients and deterioration of radiological changes.

Thus, the most favorable dynamics of the oral cavity were observed in the first subgroup of patients compared to the second subgroup, while the differences in treatment results in the compared groups ($P<0.01$) were statistically significant. We have found that the choice of method and therapy depends on the effectiveness of treatment with tablets.

Compared with the second subgroup of patients who received standard endodontic treatment, significant positive dynamics were observed in the treatment of the first subgroup of patients who received treatment according to the scheme we developed. After 12 months, the effectiveness of treatment in patients of the first subgroup was 97.8%, there were no new destructive changes

and restoration of the focus of destruction of the bone structure. In accordance with the comprehensive treatment plan we have developed, the recommended treatment method will help reduce the symptoms of inflammation in up to 2 weeks.

4.2. Analysis of the results of the immunological method for studying oral fluid

At the stage of the immunological study, IL-IA, IL-I, IL-8, TNF-interleukins in the oral cavity were studied in 45 patients in the control group, and their data were used to monitor treatment. In addition, the content of interleukins in the oral fluid was studied in patients of the first and second subgroups before and after treatment.

The obtained indicators of interleukins IL-IA, IL-I, IL-8, TNF-halogens in the oral fluid of the first and second small groups are presented in Tables 4.1 and 4.2. ELISA results were expressed in arbitrary units - mcg/ml.

Average levels of interleukins in oral fluid in the first subgroup of patients (n=46), M±m (pg./ml)

Interleukin	Control	1st subgroup	
		Before treatment	After treatment
IL-Iα	3,81±0,48	14,1±0,91	5,34±0,35
IL-Iß	3,49±0,41	14,7±1,11	6,69±0,67
IL-8	2,74±0,33	11,8±0,66	5,04±0,34
TNF-α	3,22±0,27	9,46±0,37	4,18±0,28

An immunological study showed that the levels of IL-IA, IL-I, IL-8, TNF-u Varo have statistically significant differences ($p<0.001$) in the first subgroup of patients (n=46) compared with the control group of patients (n=45) before treatment. A

statistically significant increase in interleukin values studied in control patients was observed in pre-treated patients compared with patient data (p<0.001).

In patients of the first subgroup, statistically significant differences were revealed in the Ilia, Ilia 2, IL-8, TNF complexes obtained before and after treatment. The quantitative content of interleukins in oral fluid after treatment is 2 times less than the number of interleukins taken before treatment (P<0.001). Thus, for patients in the control group and those close to them who received interleukins after taking IL-IA, IL-Iβ, IL-8, TNF-a, the indicators were: IL - Ia-5.3, IL - Iβ-6.7 at 0.9, IL - 8-4, 9 at 0.5, TNF-a - 4.2 at 0.7/ml.

Based on the data in Table 4.2, as a result of immunological studies, the indicators IL-IA, IL-I, IL-8, TNF- have statistically significant differences compared to the control group of patients in the second subgroup (n = 46) before treatment, the studied interleukin index has statistically significant increase according to patients in the control group (n=45) (p<0.001).

Average levels of IL in mixed saliva in the 2nd subgroup of patients (n=46), M±m (pg/ml)

Interleukin	Control	2nd subgroup	
		Before treatment	After treatment
IL-Iα	3,81±0,48	12,5±0,75	10,4±0,78
IL-Iß	3,45±0,42	14,8±0,64	8,9±0,64
IL-8	2,74±0,36	13,8±0,76	10,2±0,49
TNF-α	3,22±0,27	9,1±0,45	7,55±0,38

The indicators of interleukins IL-Ia, IL-Iβ, IL-8, TNF-α in patients of the control group from normal values after treatment also differed significantly and were as follows: il-Ia - 10.5 was 0.7, il-Iβ - 8 .8, IL-8 and 0.5, and TNF-α - 7.6 at 0.4 ng/ml (p<0.01).

The concentrations of IL-IA, IL-I, IL-8, TNF-interleukins in the oral fluid were found in subgroups 1 and 2 before and after treatment compared to patients in the control group in Figures 4.1-4.4.

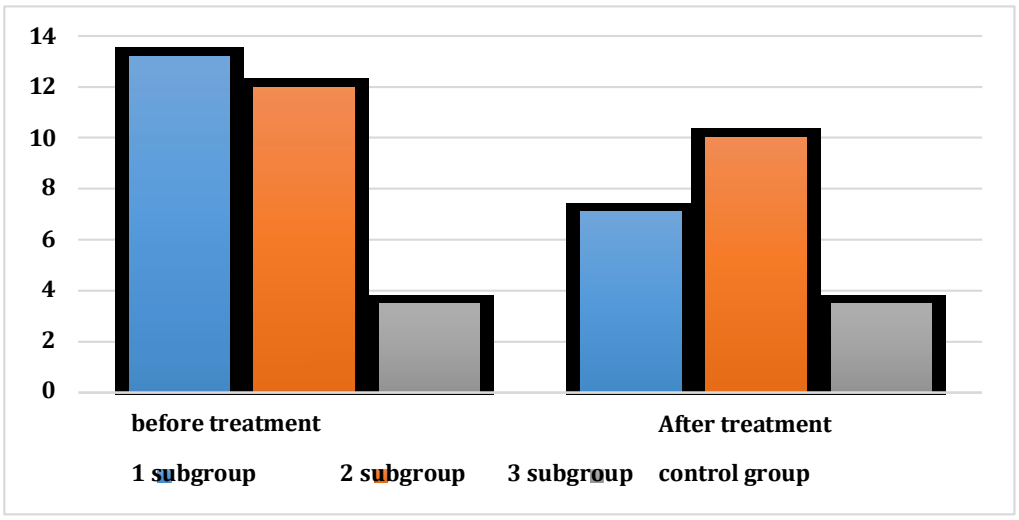


Fig.4.1. IL-Iα content in the oral fluid of subgroups 1 and 2 of patients before and after treatment.

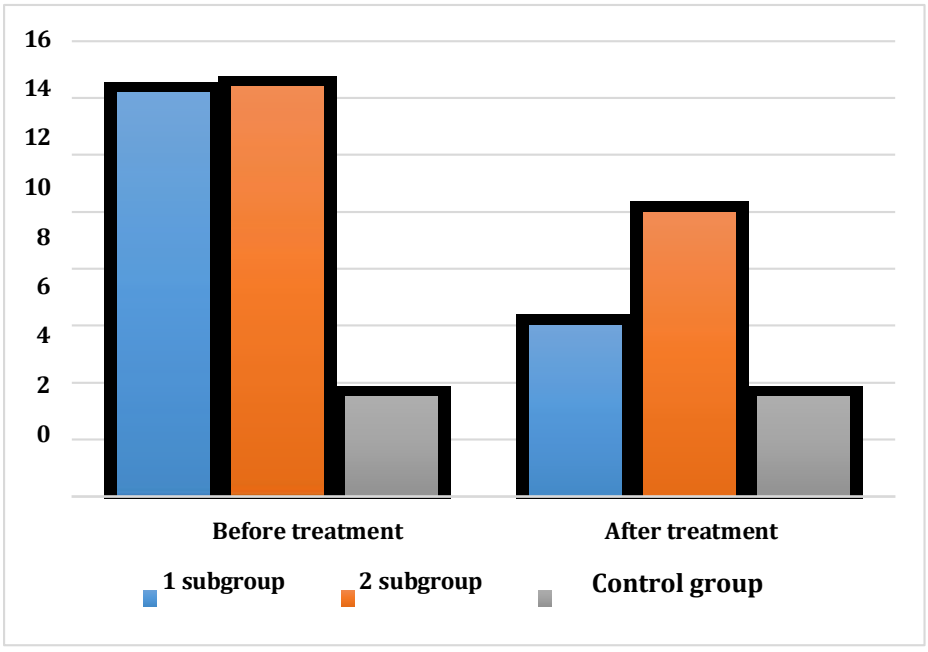


Fig.4.2. IL-Iβ contents in oral fluid in the first and second subgroups of patients before and after treatment

Data on the level of pro-inflammatory cytokines (IL-IA, IL-I, IL-8, TNF-Tn) in the first subgroup of patients receiving complex treatment,show the most effective treatment compared to the standard method in the second subgroup of patients. The indicators of the first subgroup after treatment were close to the normal indicators of the control group and were statistically different from the indicators of the second subgroup, which indicated a more favorable treatment outcome for the first subgroup.

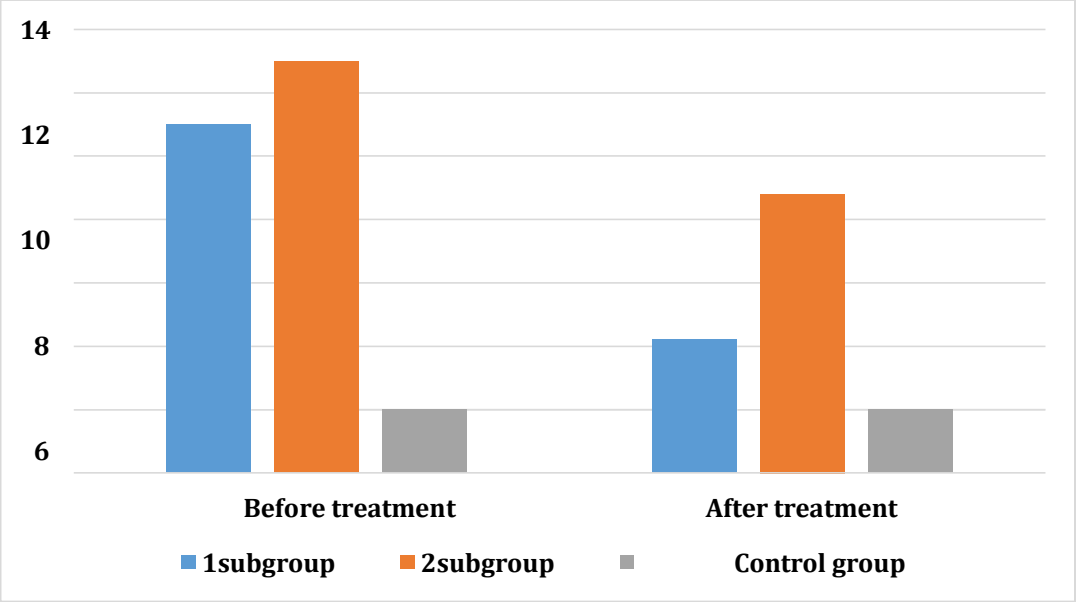


Fig.4.3. IL-8 content in oral fluid in subgroups 1 and 2 of patients before and after treatment.

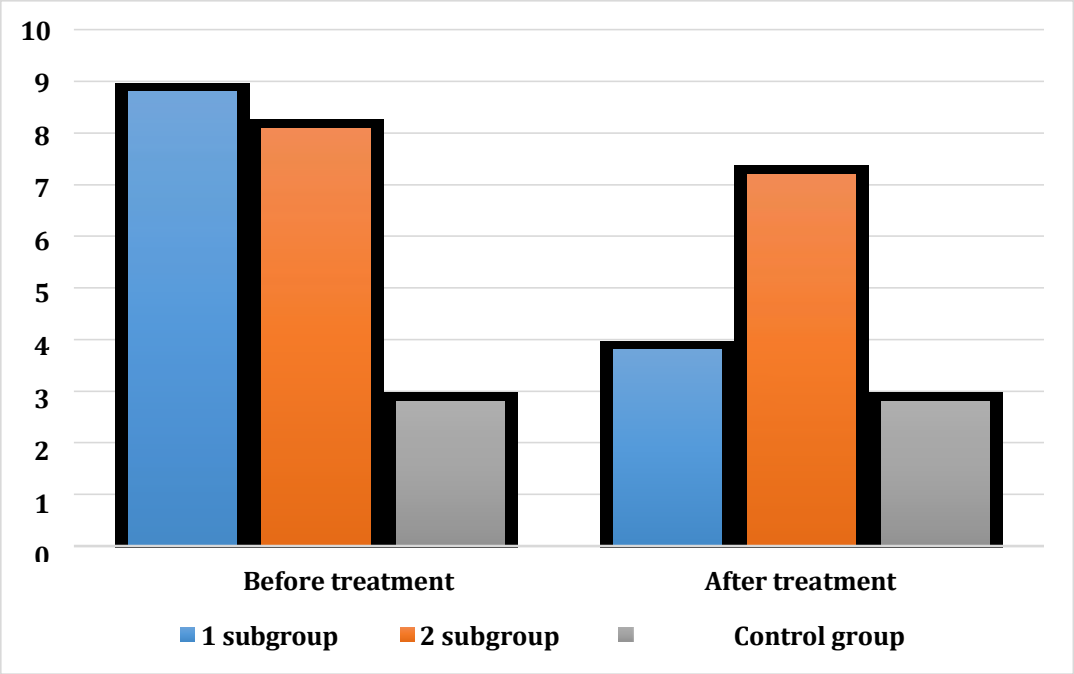


Fig.4.4. Indicators of TNF-α in oral fluid in subgroups 1 and 2 of patients before and after treatment

Therefore, it is recommended to use the results of an immunological study on the tablet to evaluate and evaluate the effectiveness of treatment. We have established a relationship between immunological parameters of the oral cavity and the effectiveness of treatment. Increased concentrations of inflammatory cytokines in mixed saliva indicate the presence of inflammatory processes that promote osteoclast activity and differentiation in periapical tissues.

CONCLUSION

According to medical statistics, the prevalence of dental caries in the last three years alone has increased from previously damaged whole teeth due to periodontal tissue diseases to 91.4% during pregnancy physiologically, with an extremely acute course of the carious process, to 90% in 38% of pregnant women. Secondary caries, the development of the caries process, enamel hyperesthesia occurs in 79% of pregnant women. Particularly acute are the complications of the above-mentioned dental diseases, which have a negative impact not only on the mother's body, but also on the health of children.

Despite the sufficient number of dentists in advisory clinics. Thus, there was a need to formulate a concept that would make it possible to offer modern methods of diagnosis, prevention and treatment of dental diseases among pregnant women, which have the properties of influencing the homeostasis of the oral cavity and the general condition of the body.

During pregnancy, the risk of progression of major dental diseases – dental caries and periodontal diseases – increases significantly. The physiological characteristics of the body of pregnant women contribute to the rapid development of new periapical lesions and the progression of existing ones. It is known that pregnancy causes significant changes in the neuroendocrine system, which contributes to changes, mainly in the exchange of microelements and electrolytes, and especially large changes occur in the bone, including the dental system, and the formation of a secondary immunodeficiency state.

In the occurrence of odontogenic inflammatory diseases over a long period of time, the main role was played by pyogenic aerobic and facultative anaerobic microflora: staphylococci - 15%, streptococci in 6% and obligate anaerobic bacteria – in 79% of cases. This composition of the microflora of the odontogenic lesion was determined in numerous microbiological studies (Romanova V.L., 2014; Khazakov R.D., 2015). Odontogenic inflammatory diseases of the maxillofacial region during pregnancy are characterized by special clinical

manifestations or more severe consequences. Acute infections, accompanied by severe intoxication and hyperthermia, can stimulate the activity of the uterus, thereby leading to a possible termination of pregnancy.

Thus, it is important to note that the optimal solution to the problem of providing surgical dental care to pregnant women in the treatment of acute inflammatory processes of periapical tissues and tactics for preventing complications have not yet been found, and these issues require further study. In this regard, the development of diagnostic algorithms and new approaches to the treatment of inflammatory processes in the maxillofacial area in pregnant women remains extremely relevant, which was the basis for conducting this study.

At the adult surgical dentistry clinic of the Tashkent State Dental Institute, pregnant women were provided with therapeutic and surgical dental care both on a planned and emergency basis. Dental care for pregnant women was provided by trimester, taking into account the characteristics of each period both from the body of the expectant mother and the fetus. The period of the first trimester is up to the 13th week inclusive, from the 14th to the 27th week - the second trimester, the third trimester lasts from the 28th to the 40th week of pregnancy.

In total, dental care was provided to 195 pregnant women, of which 165 women sought routine dental care, and 65 women sought emergency care.

In the first trimester, 165 women sought routine care for urgent reasons. In the second trimester, 75 patients were provided with emergency dental care in accordance with a previously drawn up treatment plan and the patients' need for sanitation. In the third trimester, dental care was provided to 95 pregnant women on an emergency basis.

To examine the condition of the tissues of the oral cavity and register the data obtained, a method developed by WHO experts was used, with all the results obtained being entered into the "Card for assessing dental status in adults" (2013).

During the clinical examination, patient complaints were identified (the presence of bleeding, swelling of the gums, bad breath, dental plaque, pathological mobility and high sensitivity of teeth to temperature and chemical stimuli, pain

when eating), the recipe for the disease and the reasons for its development (time of onset the first signs, the nature of the disease: the presence of relapses, their occurrence and duration of remission, past and concomitant diseases (a connection between systemic diseases and diseases of the respiratory system was carried out), age, heredity, the presence of bad habits (smoking, dental devices, etc.), hygienic patient skills. The most important task of medicine is to preserve both the health of the mother and the health of the child. To solve this problem, specialists from different fields, including dentists, participate. Of all types of emergency or planned medical care, dental professional care should be mandatory during all periods of pregnancy. Organization of dental examination, sanitation and prevention of inflammatory diseases of the oral cavity in pregnant women is one of the most important and main tasks of modern dental care for the population. For early detection of various inflammatory processes of the oral cavity and monitoring the effectiveness of the sanitation, as well as to prevent the development of complications, it is necessary to routinely carry out dynamic monitoring of the dental status and condition of the oral cavity in pregnant women during all periods of pregnancy. Prevention of various dental diseases of different origins in pregnant women at the primary level is an urgent problem of modern medicine. At the same time, the main purpose of medical examination of these women is dental examination, while the main role should be given to the sanitation of the oral cavity.

Dental care provided during pregnancy has its own characteristics, which are based on physiological changes in the body of a pregnant woman. Govindasamy R, Periyasamy S, Narayanan M, 2020 report the effect of non-surgical periodontal therapy on adverse pregnancy outcomes: a systematic review of current evidence. Poor maternal oral health during pregnancy affects the fetus through the oral-systemic link.

Various studies have shown a link between poor maternal oral health and adverse pregnancy outcomes. Thus, periodontal therapy becomes indispensable during pregnancy. 75% of patients with chronic periodontitis in the register of therapeutic and surgical dentistry constitute a serious problem, due to the

complexity and labor-intensiveness of medical procedures, a high percentage of failures and complications during treatment. In addition to the pain syndrome characteristic of this disease, the presence of a focus of odontogenic infection poses a danger to tissues, organs of the oral cavity and the body as a whole due to the progressive replenishment of the microbial landscape of oral fluid, pathogens, and bacteriotoxins. The consequence of this dental pathology is premature loss of teeth and, in connection with this, disruption of the functions of chewing and speech, the aesthetics of the dentition in people of any age, which creates conditions for other dental and somatic pathologies. And once again emphasizes the relevance of the problem of finding effective endodontic treatment for periodontitis. The main reason for unfavorable outcomes of treatment of teeth with chronic apical periodontitis is inadequate sanitation of the root canal system. The frequency of exacerbations in the immediate and long term after traditional endodontic treatment remains high.

Difficulties in the treatment of periodontitis are due to the duration of the regeneration processes of the focus of destruction of the periapical region, which are observed mainly 6–12 months or more after completion of endodontic treatment. Another problem that complicates or even excludes the possibility of a complete endodontic therapeutic effect on the periodontium is the 4th feature of the anatomical structure of the root canals of the teeth. The literature describes important links in the pathogenesis of chronic periodontitis with the rationale for various treatment methods. To a lesser extent, the factor of further spread of the infectious focus in the periapical tissues and the formation of relapse, sensitization of the body and conditions for the development of chroniosepsis are taken into account. All the difficulties expressed lead to a new, more complete imbalance of periapical tissues, oral fluid, blood, and the subsequent selection of optimal treatment methods that are relevant for new pathological conditions that have emerged. Despite the variety of methods for treating chronic apical periodontitis, the treatment of exudative-destructive inflammation of the periapical tissues of the tooth root has not yet been achieved; the need for detoxification, stabilization of immune mechanisms and prevention of relapses of exacerbation of chronic periodontitis are not always

taken into account. In connection with this, there is a need to conduct a comparative analysis of existing treatment methods and conduct scientific research aimed at improving known and developing new complex methods of treating chronic apical periodontitis. The results of the study contributed to the improvement of diagnosis and complex treatment of chronic apical periodontitis. The proposed method for studying bacteriological exudate from the root canal and periapical area of the tooth, a treatment complex, which made it possible to identify a stimulating effect on improving the immune local and general status of the body. Ways have been found to prevent relapses and prevent complications of periodontitis. Periodontitis or periodontitis is a pathology affecting the periodontium.

These are connective tissues that are located between the tooth root and the alveolar ridge plate. Healthy alveolar tissue ensures reliable fixation of the tooth in the jaw. This also allows you to load it while chewing food. If the tissues become inflamed, their holding capacity decreases. Accordingly, the condition negatively affects the functionality of the teeth. The periodontium consists of a large number of fibers. They contain a large amount of collagen. This makes them not only durable, but also elastic. With periodontitis, the integrity of the fibers is compromised. The peripheral soft tissues become inflamed. In the absence of timely treatment, this can cause a purulent process, the formation of granulomas, and inflammation of bone tissue. The main cause of a serious disease is the process of decay of nerve tissue with the spread of inflammation to the surrounding ligaments. As a result, toothache and severe tooth mobility appear. At the same time, due to the spread of the infectious process, there is a general increase in body temperature and an increase in regional lymph nodes. At the same time, an asymptomatic course of the disease is possible, when the bone tissue, as a result of inflammation, is absorbed in the apex area and a granuloma is formed in its place. It looks like a “bag” at the top of the root. Sometimes inflammation occurs at the site of the granuloma, that is, a cyst is formed. In order to save a tooth in this situation, long-term treatment will be required, sometimes up to a year. In addition, it is worth considering that, as a

source of infection, periodontitis can lead to glomerulonephritis, rheumatism and damage to the heart valve system.

First of all, these are inflammatory processes involving the periodontium. For example, this may be an increase in the depth of the periodontal pocket. The resulting pain makes hygiene difficult. Bacteria multiply in the pocket, which can penetrate into deeper tissues and cause inflammation. Pathologies accompanied by an increase in saliva viscosity are also important. It is no longer able to thoroughly wash the surface of the teeth, which increases the risk of caries and inflammatory gum diseases. In more rare cases, the development of periodontitis is possible due to infection from a nearby focus, for example, purulent inflammation in the oral mucosa or a boil on the face or in the neck area. Any carious cavity is a source of infection and requires treatment. Caries spreads quickly and within two weeks from the moment the cavity forms, it becomes chronic. Periodontitis can be provoked by advanced forms of caries, all types of pulpitis and acute inflammation of the mucous membrane. Sometimes periodontitis develops sometime after root canal treatment. It is caused by the filling paste moving beyond the apex, incomplete cleansing of the canals, or missing one of them. May cause non-infectious inflammation. As a rule, it is caused by immediate injuries. A blow to the root area, displacement of a tooth during a sharp bite, or an attempt to split a hard object with teeth can cause injury to periodontal tissue and, as a result, inflammation.

Chronic injuries can also lead to it. They often occur in smokers when a pipe is used that constantly puts pressure on the same tooth. The same goes for the habit of holding a pen in your mouth. It also constantly puts pressure on the root part. The likelihood of developing periodontitis increases in people of certain professions: for example, brass band musicians may experience inflammation due to constantly increased pressure in the oral cavity. The same goes for seamstresses who hold needles with their teeth or bite threads. This can also cause tissue inflammation. The severity of the signs of the disease depends on what stage of development the pathology is at. Acute is characterized by pronounced signs of inflammation, while in chronic cases complaints may be

completely absent. Most often, symptoms appear during an exacerbation. Pain in the area of the causative tooth. At first the pain is weak; it is difficult to determine exactly where it hurts, since the sensations are “diffused”. Later, the pain increases and becomes unbearable. The pain intensifies when touching a tooth or while chewing food. It feels like the tooth has grown and become taller, since when closed, pain occurs in the area where the antagonist teeth come into contact. A large cavity is revealed in the tooth. Previously, the patient may have suffered from manifestations of pulpitis, which were suppressed by taking medications. In the projection of the root apex, tissue swelling is possible. A doctor can detect it using an X-ray examination. With the development of a purulent focus, the contents find their way out, resulting in the formation of a fistulous tract in the area of the apex projection. It looks like a small ball on the gum, which subsequently opens, resulting in pus coming out. The tooth no longer reacts to temperature stimuli, sour or sweet, but pronounced mobility appears due to the accumulation of exudate in the periodontal area. Examination of the oral cavity to measure the depth in the vestibule of the oral cavity, to assess the condition of the mucous membranes of the oral cavity, the bridges of the upper and lower lips and tongue, the condition of the oral mucosa (color, consistency, bleeding, consistency with underlying tissues, the presence of edema, aphthae and ulcers , plaque on the tongue, desquamation of the quality of fillings and prosthesis placement.

To study the relationship between the dentist and patients as a factor determining the effectiveness of treatment and preventive research in dental practice.

An analysis of a sociological survey on the attitude of dentists at a consultative clinic to their profession and the prevention of the health of patients was carried out. The results of a survey of 42 dentists were analyzed, including 12 dentists from consultative clinics, 24 dental surgeons from specialized clinics, and 6 maxillofacial surgeons from hospitals.

In parallel, the results of a survey of 203 patients who underwent a medical examination before marriage in family advisory clinics were analyzed; outpatient records of 192 patients, of which 128 (67%) were pregnant at various stages (by

trimester) and 64 (43%) married non-pregnant patients in a specialized surgical dental clinic. An analysis of 131 medical histories (anamnesis) of inpatients was carried out, 67 (51%) of which were

Based on archival data for three years (2017-2019), an analysis of 67 case histories of hospitalized pregnant women aged 19 to 44 years with various types of odontogenic inflammatory processes of the maxillofacial area, and 128 outpatient records of pregnant women with various inflammatory processes of the periapical tissues of the dental system. A statistical analysis of case histories was carried out depending on the severity of inflammatory processes in the maxillofacial region at different stages of pregnancy and the surgical and conservative interventions performed in different locations.

On the basis of the adult surgical dentistry clinic of the TGSI, an analysis of 67 case histories of hospitalized pregnant women with odontogenic inflammatory processes, treated for 3 years, was carried out of these, in 2017 – 24 were pregnant, in 2018 – 21 and in 2019 – 22 women. Diagnoses and types of operations performed are presented in Table 2.

According to Table 2, over 3 years, of the hospitalized pregnant women with odontogenic phlegmons of the maxillofacial region of various locations, 34 (51%) patients were present; 17 (26%) pregnant women were hospitalized with odontogenic abscesses, periostotomy of a diffuse nature was carried out in 9 (13%) pregnant women, 5 (7.5%) pregnant women were treated with various infiltrations and acute lymphadenitis of a serous nature.

From case histories, based on a detailed statistical study of the results of biochemical tests, it was revealed that out of 67 (100%) hospitalized pregnant women, in accordance with the processes of inflammation, in addition to a shift in the leukocyte formula, a decrease in hemoglobin content was observed in 99.5% of women. Mild anemia occurred in 38% of all patients, moderate anemia in 43% and severe anemia.

When planning an appointment with a dentist, you should avoid critical periods of pregnancy, that is, dangerous moments such as the possibility of miscarriage or

premature birth. At this time, the most minor internal and external irritants can cause the tone of the uterus, lead to its contraction and ultimately lead to miscarriage or premature birth. Observation of pregnant women who were hospitalized during their stay in the hospital for the treatment of inflammatory processes of the maxillofacial region, 12.0% of all treated pregnant women had premature birth. In the surgical dentistry clinic of the Tashkent State Dental Institute, monitoring of pregnant women who applied in the period 2017-2019 was carried out. Analyzed 128 outpatient records of pregnant patients with various forms of odontogenic inflammatory processes of the maxillofacial system. Over the course of three years, the percentage of outpatient visits with exacerbation of chronic periodontitis was in 62 (48.0%) pregnant women. 19 (14.5%) women were diagnosed with odontogenic periostitis of the jaws; 19 (14.5%) pregnant women sought help from a dental surgeon with various inflammatory infiltrations of the maxillofacial area. Based on a study of outpatient medical records during dental examinations of pregnant women, examination and treatment were not carried out efficiently in 86% of women; there were “false certificates”. According to the results of statistical analysis, it was revealed that out of 128 (100%) pregnant women who applied after outpatient surgical interventions, during dynamic observation, 21 (15.8%) women were identified who were hospitalized in the hospital with various types of purulent-necrotic complications of the maxillofacial area. Thus, based on the results of the monitoring, we can conclude that visits from pregnant women to a dental surgeon accounted for a significant number of the total number of patients who sought medical help.

To solve these problems, 92 patients with chronic apical periodontitis of teeth aged 18-44 years, 2018-2020, were observed. The women were informed about the examination methods and planned treatment, for which their written consent was obtained.

The effectiveness of diagnosis, follow-up and treatment was determined by clinical, radiological, and immunological research methods.

During the first visit, complaints were identified, anamnesis was collected and additional methods were applied, including clinical and instrumental examination.

16.3% of the examined patients complained of periodic toothache, which was aggravated by the formation of periodic fistulas in the gums and lower teeth; 32.6% - change in color of the dental crown; 21.7% - disappearance of seals; 29.3% of women were referred to an orthopedic dentist to prepare their teeth for a supporting structure. In the anamnesis, there were cases of exacerbation of the disease in patients after several years of treatment of the causative tooth.

During an external examination in pregnant women, the configuration of the face does not change, the physiological color of the skin, the regional lymph nodes do not enlarge and become painless on palpation.

Hyperemia and swelling of the gums during a clinical examination in the area of the teeth in question was 16.3%, a change in the color of the crown of the tooth and a violation of the integrity of the dental crowns in all examined patients, mobility of teeth I-II degrees - 20.6%, pain during probation and percussion - 33.7%, comparative percussion - 33.7%%

At the stage of radiological examination, all main patients needed to determine the condition of the patient's teeth, identify chronic odontogenic infections using orthopantomography and be asymptomatic.

To determine the localization of pathological foci and the severity of tissue changes in the periapical and furcase zones, as well as to identify additional canals, 48 patients (52.1%) underwent dental tomography of the size of the branches from the main canal.

Any violation of the internal environment of the body, regardless of the nature, time and strength of the harmful agent, is a critical condition for the immune system. When the stability of the internal environment is disrupted, the scenarios for the development of immunological phenomena are the same as for small skin cuts and large wounds. The same type of cells of the immune system participate in the healing process, and the same mediators synthesized by these cells will have the same stages of the spread of protective reactions. The intensity of

defensive reactions and the speed of their spread are determined by the strength and duration of action harmful agent. An exception to this scheme is such damage to the body, as a result of which shock reactions develop.

In the women examined, the state of the oral defense system was accompanied by significant disturbances in the immune defense mechanisms, manifested by local changes in the cytokine profile.

One of the key links in the disruption of the oral immune system is the inflammatory mediator interleukin-1 (IL-1). IL-1 stimulates the production of adhesion molecules by endothelial cells, which promotes the attachment of polymorphonuclear granulocytes and monocytes, as well as the mobilization of these cells to the site of inflammation.

Proinflammatory cytokines (IL-1) stimulate the production of matrix metalloproteinases, reduce the production of tissue inhibitors of metalloproteinases, and stimulate the activity of the cytokine system for bone tissue repair.

An imbalance of cytokines in oral fluid can serve as an additional diagnostic and prognostic sign of the severity of inflammatory periodontal diseases in pregnant women.

The content of IL-1 in the blood serum was higher on average by 3.3 times in relation to the data in the oral fluid, while in the oral fluid the degree of increase in this interleukin was 2 times. Similar dynamics were noted regarding the content of defensin in the studied samples. Thus, the level of defensin in the blood serum of women cyclically increases by 56%, and in the oral fluid increases by an average of 1.9 times. In general, we see an increase in the studied alarmins in the blood serum and oral fluid of the subjects, which indicates the mobilization of a pro-inflammatory cytokine and antimicrobial peptide against the background of a stressful situation.

In the women examined, the level of mucosal immunity sIgA decreased by 30%; IL-2 levels decreased by 12%. Relatively pro-inflammatory cytokines IL-6 and

IL-8, different dynamics were observed when the level of IL-6 increased by 4.8 times, and IL-8 by 15 times.

Assessment of oral mucosal immunity shows a significant decrease in sIgA. A decrease in the level of IL-2 in the oral fluid, accompanied by a deficiency of SIAG, can be considered as a negative factor that contributes to the formation of chronic inflammatory periodontal diseases and contributes to the development of destructive processes in bone tissue. An assessment of the dynamics of the values of pro-inflammatory cytokines IL-6 indicates high activation of the macrophage system, which leads to the synthesis of acute phase reagents containing C-reactive protein, transferrin, and ceruloplasmin.

Thus, the results of a comprehensive assessment of the condition of pregnant women indicate the combined impact of unfavorable factors on the tissues of the oral cavity, such as a low level of hygienic condition of the oral cavity, a decrease in the functional activity of the salivary glands, changes in secretory properties, in particular, the surface tension of saliva; inhibition of local mucosal immunity of the oral cavity; increased levels of microbial contamination.

When examining healthy non-pregnant women, it was found that the mean and median selective concentrations of lactoferrin in saliva were 1.03 mg/ml and 1.12 ± 0.05 mg/ml, respectively, the interquartile range corresponded to 0.76-1.45 mg/ml.

In all three trimesters, lactoferrin was significantly higher in physiological pregnant women in the absence of a purulent process compared to a group of healthy non-pregnant women ($P<0.05$), and in the first and third trimesters of pregnancy it increased without problems.

In cellulitis, salivary lactoferrin levels were significantly higher in pregnant and nonpregnant women compared with patients with cellulitis. The most noticeable increase in lactoferrin in the third trimester of pregnancy was observed in patients with PHLEGMONIC Chloe.

Thus, the level of lactoferrin in saliva was associated with pregnancy itself, the duration of the gestational period, and the presence and duration of a purulent

process. And the connection between these phenomena was direct. Throughout physiological pregnancy, an increased concentration of lactoferrin is observed in saliva. As the purulent process continued, the level of lactoferrin in saliva increased with a large gradient. The antimicrobial mechanism of lactoferrin can lead to conjugation, which is established between the development and course of the process and an increase in the level of peptides in saliva. Thus, lactoferrin in saliva can be considered not only as a sign of inflammation in the oral cavity, but also as a sign of the negative course of the purulent process.

Thus, the level of lactoferrin in saliva in pregnant women is higher and increases by the third trimester of the gestational period, and the development of a purulent process is accompanied by an increased content of lactoferrin in saliva, and this phenomenon is associated with a significant increase in the level of lactoferrin in the blood.

To objectify the results obtained, a group of patients with 92 forms of chronic periodontitis was divided into 2 equal subgroups:

Subgroup 1, n=46 people (50.0%), included patients with maxillofacial lesions who were treated according to the complex treatment regimen we developed.

In the 2nd subgroup, n=46 people (50.0%) with maxillofacial lesions who were treated using the traditional method of treatment.

The effectiveness of treatment of patients and their follow-up were assessed based on the results of clinical and radiological examinations 6 and 12 months after the start of treatment.

A study of immediate and immediate clinical results after treatment (within 14 days) showed that in the first small group of 46 patients examined, 10 women (21.7%)

There was a slightly painful palpitation, which disappeared on its own after 2-3 days.

Clinical results in 46 patients of the second subgroup with standard treatment showed that 15 women (32.6%) complained of painful percussion and painful pain for two weeks.

6 (45%) months after endodontic treatment, 95.6% of patients in the first subgroup had no clinical manifestations, radiological dynamics were positive, foci of tissue absorption in the periapical space decreased, 2 (4.35%) women had no clinical manifestations, but X-ray changes in the periapical space continued.

In the second subgroup of patients, 32 (69.56%) had no clinical picture and positive radiological dynamics; in 8 (17.39%) there was no clinical picture, but radiological changes continued. 6 (13.05%) patients had signs of worsening radiographic condition.

In the first subgroup, after 12 months, the clinical picture was absent in all patients, with the exception of one clinical case; radiological changes were partially preserved (reduction of the lesion by 50%).

In the second subgroup, after 12 months, 33 (72%) patients had no clinical picture and the x-ray showed restoration of the focus of destruction of the bone structure, 5 (11%) patients did not have complete restoration of bone tissue, 8 (17%) patients showed signs of disease progression and deterioration of radiological parameters.

Thus, the most favorable dynamics of the oral cavity was observed in the first subgroup of patients compared to the second subgroup, while differences in treatment results in the compared groups ($P < 0.01$) statistically significant. We have found that the choice of method and therapy depends on the effectiveness of treatment with tablets.

Compared with the second subgroup of patients who received standard endodontic treatment, significant positive dynamics were observed in the treatment of the first subgroup of patients who received treatment according to the scheme we developed. After 12 months, the effectiveness of treatment in patients of the first subgroup was 97.8%, no new destructive changes were observed, and the structure of the focus of bone tissue destruction was restored. In

accordance with the comprehensive treatment plan we have developed, the recommended treatment method will help reduce the symptoms of inflammation in up to 2 weeks.

At the stage of immunological research in patients 45, IL-Ia, IL-I, IL-8, TNF-interleukins were examined in the oral cavity, the data of which were used to monitor treatment. In addition, the content of interleukins in oral fluid was studied in patients of the first and second subgroups before and after treatment.

As a result of immunological studies, it was found that in patients of the first subgroup, interleukin levels (n=45) ($p<0.001$) (n=46) had statistically significant differences before treatment. Compared with patients in the control group ($P<0.001$), a statistically significant increase in the studied Interleukin parameters was observed in patients examined before treatment.

Statistically significant differences were also revealed in the IL-Ia, IL-Iecs, IL-8, Tnf complexes obtained before and after treatment in patients of the first subgroup. The quantitative content of interleukins in oral fluid after treatment is 2 times less than the amount of interleukins taken before treatment ($P <0.001$). Thus, for patients in the control group and relatives of those who were treated with interleukins after taking Il-Ia, Il-ib, il-8, TNF-a, the numbers were: IL-Ia - 5.3 at 0.7; IL-Iβ - 6.7 at 0.9; IL-8 - 0.9 at 0.5;

TNF-a - 4.2 at 0.7 rpm.

In the second subgroup of patients (n=46), as a result of immunological studies, the indicators of IL-Ia, IL-I, IL-8, TNF-interleukins had statistically significant differences in the ratio of the studied interleukins (n=45) ($p<0.001$) compared with control group of patients.

A study of the level of pro-inflammatory cytokines in the first subgroup of patients receiving complex treatment (IL-Ia, IL-I, IL-8, TNF-a) shows the most effective treatment compared to the standard method in the second subgroup of patients. The indicators of the first subgroup after treatment were close to the normal indicators of the control group and were statistically different from the

indicators of the second subgroup, which indicated a more favorable treatment outcome for women of the first subgroup.

Thus, it is recommended to use the results of immunological testing in the tablet to evaluate and evaluate the effectiveness of treatment. We have established a connection between immunological parameters of the oral cavity and the effectiveness of treatment in the studied groups of patients. An increase in the concentration of the cytokine interleukin in the oral fluid, which causes the activity and differentiation of osteoclasts, indicates the presence of inflammatory processes in the periapical tissues, which stimulate their activity.

In patients with purulent-inflammatory diseases, ultrasound osteometry was performed with an oscillation frequency of 120±36 kHz. The diagnostic transmission head was installed in a distal position relative to the apex of the root of the causative tooth and taken in a proximal position. The distance between the sensors was fixed at 94.0 mm.

It was found that in healthy women of the study group, the ultrasound transit time averaged 3843.51±20.1 m/sec. Before treatment in patients of group 1 from 3155.42±14.6 m/sec., in patients of group 2 from 3120.28±18.7 m/sec. Studies conducted within 14 days after operations had the following dynamics: 3291.17±15.3 m/sec in group 1 of patients. and in group 2 patients 3255.23±17.1 m/sec. Three weeks after surgery, when examining patients, the average transit time of ultrasonic waves in patients of group 1 was 3377.25 ± 18.1 m/sec. in comparison with the indicators of group 2 patients - 3341.58 ± 14.9 m/sec. According to data obtained by ultrasound osteometry, patients in group 2 had higher bone density in the area of inflammation than patients in group 1.

Thus, the results of the studies indicate that the use of ultrasound osteometry by accurately determining and assessing bone tissue density in odontogenic inflammatory diseases has a high diagnostic value and justifies the effectiveness of the proposed complex for the treatment of inflammatory diseases in pregnant women.

Based on the results obtained during the dissertation “Prevention of complications of inflammatory processes of periapical tissues in pregnant women” the following conclusions were formulated.

During the period 2017-2020. There was an increase in the number of pregnant women seeking outpatient treatment with complications of acute inflammatory processes of periapical tissues by 31%, and the number of hospitalizations for this category of patients increased by 23%.

In pregnant women with purulent-inflammatory diseases of the maxillofacial area, critical changes occur in both the quantitative and qualitative composition of the oral microflora with the development of severe dysbacteriosis and immunodeficiency with a decrease in the number of lactobacilli and streptococci by an average of 42.0%, a sharp increase content of staphylococci, fungi and Escherichia. A study of the mucosal immunity of examined pregnant women with purulent-inflammatory processes of the maxillofacial area showed a decrease in sIgA by 30% and the level of IL-2 by 12%. A different dynamics of changes in concentration was observed for pro-inflammatory cytokines: the level of IL-6 increased by 4.8 times, IL-8 by 15 times. At the same time, the synthesis of not only primary inflammatory mediators is enhanced, but the content of lactoferrin in saliva also increases by an average of 2.3 times. The inclusion of osteoperforation of bone in the focal areas of the jaws in the complex treatment, taking into account all indications and contraindications, provides higher clinical effectiveness in the treatment of purulent-inflammatory processes of the maxillofacial area in pregnant women. The proposed method of complex treatment according to the developed scheme helps to reduce inflammatory manifestations and reduce the duration of treatment by 2.2 times. The most important task of medicine is to preserve both the health of the mother and the health of the child. To solve this problem, specialists from different fields, including dentists, participate. Of all types of emergency or planned medical care, dental professional care should be mandatory during all periods of pregnancy. Organization of dental examination, sanitation and prevention of inflammatory diseases of the oral cavity in pregnant women is one of the most

important and main tasks of modern dental care for the population. For early detection of various inflammatory processes of the oral cavity and monitoring the effectiveness of the sanitation, as well as to prevent the development of complications, it is necessary to routinely carry out dynamic monitoring of the dental status and condition of the oral cavity in pregnant women during all periods of pregnancy. Prevention of various dental diseases of different origins in pregnant women at the primary level is an urgent problem of modern medicine. At the same time, the main purpose of medical examination of these women is dental examination, while the main role should be given to the sanitation of the oral cavity.

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