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ASSESSMENT OF THE DENTAL STATUS OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Abstract
The clinical manifestations of autoimmune rheumatoid arthritis (RA) are not only due to joint involvement, but also due to systemic (extra-articular) manifestations. The most frequent of them are orofacial signs and symptoms, such as hyposalivation, xerostomia, temporomandibular disorders, catarrhal, aphthous, ulcerative lesions of the oral mucosa, periodontal diseases, dysphagia and dysphonia. However, the peculiarities of the development of pathology of hard tissues of teeth and periodontal diseases remain incompletely understood.
The results of clinical and clinical-laboratory examinations revealed that patients in RA-P were in a significantly more unfavorable situation than those examined in the subgroup of RA-1 and control groups. The examined patients in both subgroups of the main group of RA-1 and RA-P had unsatisfactory oral hygiene. OHI-S index values increased with increasing duration of the disease and degree of severity of inflammatory phenomena of general systemic pathology. The RA-P subjects had on average 1.24 times higher intensity of dental caries compared to the RA-1 subjects, and 1.96 times higher indices of the control group. Gingival bleeding was 1.35 times more pronounced compared to RA-1 examinees. IR in RA-P is 2.14 times more pronounced in comparison with those examined in the control group. All these changes are observed against the background of reduced salivary secretion of the examined subgroup of RA-P in 1,4 times in relation to RA-1 and in 1,73 times in relation to the values of the control group, increased in 1,2- and 1,4-times viscosity of RG in relation to RA-1 and control groups. Decreased pH values by 1.01 and 1.21 relative to RA-1 and control groups.

Keywords: Periodontal diseases, dental caries, rheumatoid arthritis, osteoporosis, gingival bleeding, hygiene index.

Introduction

The development of interdisciplinary cooperation between dentists and specialists of other medical fields is one of the urgent tasks of modern medicine. Scientific research has confirmed the pathogenetic relationship between systemic diseases, including rheumatoid arthritis, periodontitis and pathologies of the oral mucosa (OMD), which necessitates an integrated approach to the treatment of patients with combined diseases.
The clinical picture of autoimmune rheumatoid arthritis (RA) includes not only joint involvement but also extra-articular manifestations. The most common among them are orofacial symptoms, such as decreased salivation (hyposalivation), dry mouth (xerostomia), temporomandibular joint

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dysfunction, catarrhal, aphthous and ulcerative lesions of the oral mucosa, periodontal disease, as well as swallowing disorders (dysphagia) and vocal disorders (dysphonia). Nevertheless, the peculiarities of dental hard tissue lesions and the pathogenesis of periodontal diseases in RA are still insufficiently studied and require further scientific research.

PURPOSE:

To investigate dental health in patients with rheumatoid arthritis considering concomitant osteoporosis

The inclusion criteria for patients with RA in the study were: age up to 55 years (inclusive), duration of the disease for at least 2 years, absence of anamnesis and clinical manifestations of other severe chronic somatic pathology, patient's consent to participate in the study.

Exclusion criteria: presence of anamnestic indications and clinical manifestations of other severe chronic somatic pathology, Sjögren's syndrome, diabetes mellitus, smoking, patient's refusal to participate in the study at any of the stages.

Material and methods of research: All patients were examined by a rheumatologist, who performed an objective assessment of inflammatory changes in the joints, peculiarities of the course of the disease, the degree of inflammatory activity and functional insufficiency of the joints. Case histories were studied.

The main group of 84 subjects with a reliable diagnosis of RA made according to the criteria of the American College of Rheumatologists (1987). Of these, 54 patients were without RA and had never received GC and antiresorptive therapy, as well as 30 patients with osteoporosis, who had a history or at the time of examination had received GC and antiresorptive therapy for more than 6 months. The control group of comparison included 50 patients of the same age group without general somatic pathology, who came to the clinic with complaints of carious lesions, where CPP <10 and/or periodontal diseases, as well as persons without active dental diseases (Table 1).

General characteristics of the examined patients Table 1

Groups and subgroups		**General sociomatic-CHECK CONSTRUCTION.**	**Total**	**women**	**men**	**Mean age (M±m, years)**
fundamentals	RA-1	RA patients without RA	54		4	37,6 ±0,38
	RA-P	RA patients with OP	30	28	2	42,3 ±0,45
control		Patients with stoma problems but without generalized pathology	50	34	16	41,7±0,43
		Total	134	112	22	40,5±0,39

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Of the subjects, 83.6% were women and 16.4% were men, the mean age of the subjects was 40.5±0.39, and the mean duration of the disease in the patients averaged 6.12±0.57 years.

The diagnosis of RA was made in the Departments of Internal Medicine and Cardio-Rheumatology of the TMA Sh Clinic by general rheumatologists and general practitioners. All patients were examined to identify the presence of RA and OP, the stage of the disease (according to clinical and radiologic signs). The severity and duration of the disease, as well as the presence of other concomitant pathologies were assessed. RA activity index - DAS28, including: counting of swollen joints out of all 28 possible joints. (DAS28); C-reactive protein, COE index. The state of general health was assessed by visual analog scale.

During the dental examination, patients' complaints about: pain in TMJ (both at rest and when opening the mouth), unpleasant breath odor, sensation of dryness in the mouth, relationship of dryness in the mouth with the patient's general condition (in the morning, under stress, at rest), etc. were clarified. We evaluated the hygienic state of the oral cavity, the presence or absence of difficulties in personal hygiene due to restriction of lower jaw movements, stiffness of movements and pain in the joints of the hands, the presence of additional means of hygiene in the arsenal, frequency of visits to the dentist

Dental status was assessed by the indices of CPU, OHI-S, GI-Loe, Silness, PI, IK according to Muhlemann. Orthopantomogram to clarify the diagnosis was included in the compulsory examinations. Computed tomography of the maxillofacial region was performed as indicated.

The pH of oral fluid was determined using special methods; saliva viscosity was determined using a 1-mL micropipette according to the method of Redinova-Pozdeev (1994). The excretory function of salivary glands was evaluated using sialometry - by the unstimulated rate of salivary secretion (Galkina O.P., 2018). Unstimulated oral fluid was collected by spitting into graduated tubes. Personal hygiene, water and food intake were excluded before the collection of RW of the beginning of the study. The rate of salivary secretion was determined by a special formula.

Statistical processing of the results was performed on a personal computer using the application program package "Statistica 6.0". Data are presented as arithmetic mean values and standard error of the mean (M±m). Reliability between the compared indicators was determined using Student's t-criterion. Differences were considered reliable at $p < 0.05$.

Results and their Discussion

Comparative analysis of hygienic and dental statuses in the 1st subgroup of the examined patients oral hygiene index OHI-S corresponded (2,01±0,07 and 2,18±0,08 respectively in groups RA-1 and RA-P, p<0,001). In the control group, OHI-S indexes amounted to 1.65±0.04 Worsening of oral hygiene increased with increasing duration of the disease and inflammatory activity of rheumatoid arthritis, which indicates that as destructive changes in the joints of the hands progress with impairment of their functions, the process of oral hygiene becomes more difficult.

The prevalence of caries in the 1 and P subgroups of the main group was 100%. The caries index in the RA -1 subgroup of the main group corresponded to - 4.28, fillings - 3.44, extracted teeth - 7.56, CPP index - 15.28; the caries index in the RA-P subgroup of the main group corresponded to - 5.12, fillings - 6.40, extracted teeth - 7.50. The CPP index in the RA-P subgroup was equal to - 19.02. The average value of caries, fillings and extracted teeth indices in the groups amounted

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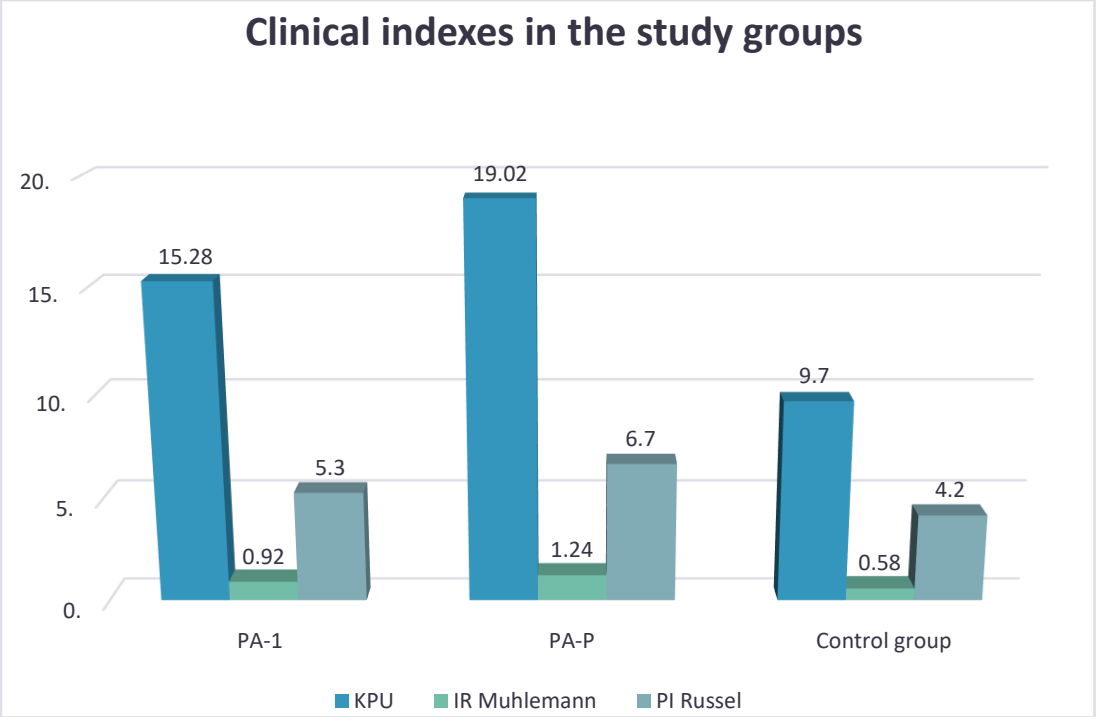
to 4.70; 4.92; 7.53, respectively. In the structure of caries in patients in both subgroups of the main group the prevalence of complicated forms was revealed, among which 76.9% were chronic forms of periodontitis. The KPU index in the control group amounted to 9.70. In the structure of CPU K - 2.8; P - 3.1, U = 3.8

Muhlemann's index of gingival bleeding in the subgroups, respectively: 0.92±0.063 and 1.24±0.075 ($p < 0.001$). The pronounced bleeding among those examined in the P subgroup is possible due to the use of GC in the treatment protocol.

Russel PI of the subjects in the RA-I subgroup was 5.3±0.07 mm, and in the RA-II subgroup - 6.7±0.09 mm ($p < 0.001$). Statistically significant difference in the indices, in our opinion, is associated with the presence of hormonal therapy in the RA-P protocol, accompanied by impaired bone metabolism and more pronounced periodontal phenomena (Fig. 1).



The rate of unstimulated salivation in the subgroup of examined RA-I patients corresponded to 0.21±0.064 ml/min, in the subgroup of RA-II - 0.15±0.082 ml/min ($p>0.05$). These indicators were considered as low secretory activity (hyposalivation). Sialometry data in the control group corresponded to 0.26±0.037.

Significant viscosity of RA was revealed, which on average corresponded to 5.28±0.34 in the RA-I subgroup and 6.37±0.41 in the RA-II subgroup. In the control group, the viscosity of PL corresponded to 4.57±0.26

The data of the dynamics of the oral fluid pH hydrogen indicator concentration change in the examined with rheumatoid arthritis, indicates the shift of the hydrogen indicator in both subgroups to the acidic side. pH in the RA-P subgroup corresponded to 5.12±0.18, in the RA-P subgroup respectively 5.17±0.22. Concentration indices of hydrogen indicator pH of oral fluid in the examined in the control group equaled 5,65±0,31 (Fig. 2).

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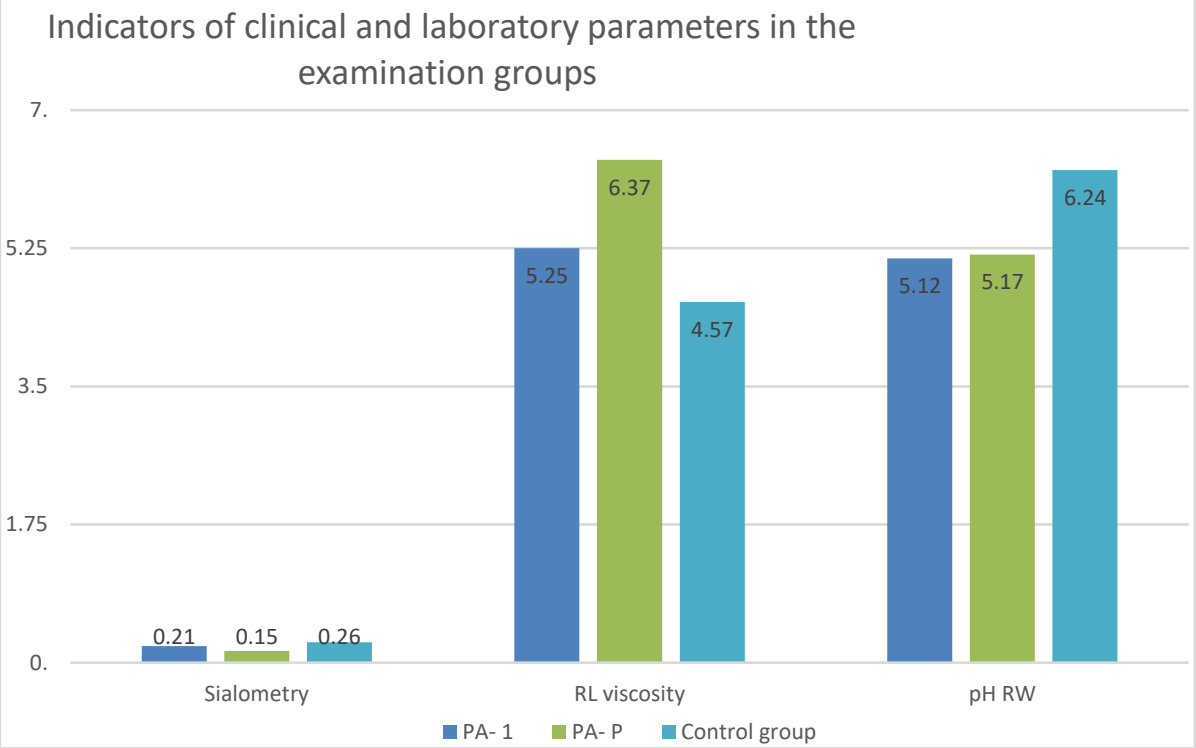

Conclusions:

Thus, we can conclude that according to the results of clinical and clinical-laboratory examinations, RA-P patients are in a significantly more unfavorable situation than the patients examined in the subgroup of RA-1 and patients without general pathology. The examined patients of both subgroups of the main group of RA-1 and RA-P had unsatisfactory oral hygiene. OHI-S index values increased with increasing duration of the disease and degree of severity of inflammatory phenomena of general pathology. The RA-P subjects had on average 1.24 times higher intensity of dental caries compared to the RA-1 subjects, and 1.96 times higher indices of the control group. Gingival bleeding was 1.35 times more pronounced compared to RA-1 examinees. IR in RA-P is 2.14 times more pronounced in comparison with those examined in the control group. All these changes are observed against the background of reduced salivary secretion of the examined subgroup of RA-P in 1,4 times in relation to RA-1 and in 1,73 times in relation to the values of the control group, increased in 1,2 and 1,4 times viscosity of RG in relation to RA-1 and control groups. Decreased pH values by 1.01 and 1.21 relative to RA-1 and control groups

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