

DENTAL STATUS IN PATIENTS WITH CHRONIC RENAL FAILURE

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Abstract – Chronic recurrent aphthous stomatitis (CRAS) - a fairly common disease among the population of the globe and the etiopathogenesis of this disease, are still not fully understood. If a number of authors note the importance of gastrointestinal pathology in the etiology of HRAS [4, 8, 1, 2, 12], other scientists are inclined in favor of the endocrine theory [3, 5, 6, 7, 9].

Keywords: chronic renal failure, oral cavity, urogenital system, immunodeficiency, urogenital infection, chronic recurrent aphthous stomatitis.

I.Introduction

Today, urogenital infection is often found among the pathology of chronic kidney and urinary insufficiency, which has an adverse effect not only on the quality of life of patients, but also on demographic indicators in general, often complicated by impaired reproductive function. In this regard, with this problem, patients are increasingly turning not only to venereologists, urologists, nephrologists, but also to doctors of other specialties. In dental practice, infections such as the herpes simplex virus of the first and second type are now increasing. Moreover, if earlier the second type was found only in practice with venereologists, gynecologists and urologists, and the first - with dentists; now dentists are faced with both the first and second type of this virus [10, 11, 42]. In connection with the literate sources, we planned to draw parallels for the presence of urinary tract infection and exacerbation of CHRAS in patients.

II.Literature review

We studied 180 patients aged 25 to 45 years, suffering from CPAS (mild to moderate) mucous membranes of the oral cavity (MOP) of which 120 were on the background of chronic inflammatory pathology of the urogenital system (group 1). All pathologies were diagnosed using ICD-S - 10 (1997). All information of patients of the 2nd group (suffering from CHRAS without pathology of the genitourinary system) and patients of the 1st group, they are according to anamnestic data; complaints during the initial treatment, age, initial values of the dental and urological status was entered in the form No. 043 / of the medical records of the dental patient and in a specially designed card for patients with chronic renal failure.

The study was approached with several positions: Study of the incidence of dental diseases in patients with the urinary tract; a comparative assessment of the immune status in patients of the 1st and 2nd group; study of fluctuations in changes in the oral fluid (RG) and blood during dental pathology in the presence of chronic renal failure.

Dental research methods; determined the intensity of dental caries, hygienic state of PR; hygienic state of PR (according to the methodology of J.C. Green, J.R. Vermillion, 1964); using the KPU index and PEC, the intensity of the carious process was estimated; complex periodontal index (KPI) (P.A. Leus, 1988); determination of saliva viscosity (N.V. Gracheva, 1999) and the macroluminescent method were used to make a final diagnosis.

An enzyme-linked immunosorbent assay (ELISA) was used in the studies; real-time polymerase chain reaction (PCR); direct immunofluorescence reaction (PIF) methods and immune status were assessed by the total number of leukocytes and the general acceptance of the leukocyte formula (J. Wibran, Y. Funderberg. 1973); determination of serum IgA, IgM, IgG (Mancini G. et al., 1965); glucose content, total protein and their fractions; sialic acid levels were determined; activity of alkaline phosphatase (ALP), the amount of total calcium, the concentration of inorganic phosphorus and color reaction with the o-cresolphthalein complex (o-CPK) with (E.L. Hess method); the level of secretory immunoglobulin A (SIgA), as well as the coefficient of balance of the factors of local protection (Ksb.) in the blood and saliva. For the study, oral fluid (RG) was taken in the morning, on an empty stomach, without stimulation, in the amount of 3-5 ml.

Statistical processing of the obtained results was carried out on a computer using the Microsoft Office (Excel) application programs, the statistical programs package “Statgraphics v.7”, “Stadia” and “Statistica 7.0”.

III. Analysis

The results of a dental study in 180 patients examined are shown in table №1.

Table №1.

Dental status examined. (M + in%)

Pathology	With pathologies of chronic renal failure (1st group)		Without pathology of chronic renal failure (2nd group)	
	120 examinations	in %.	60 examinations.	in %.
KPU, decompensation.				
KPU, subcompensation.	1	0,8%		
GPU, compensated.	3	2,5%	1	1,6%
Partial tooth loss	48	40,0%	25	41,6%
Malocclusion	29	24,1%	15	25%
Pathological abrasion	13	10,8%	5	8,3%
Local hypoplasia	2	1,6%	1	1,6%
Wedge defect	44	36,6%	18	30%
Periodontal disease	9	7,5%	3	5,0%
Catarrhal gingivitis	38	31,6%	14	23,3%
Hyperthy gingivitis, edema. fore.	13	10,8%	12	20,0%
Periodontitis	33	27,5%	15	25,0%
Swelling of SOPR	8	6,6%	1	1,6%
Dryness, atrophy SOPR	5	4,1%	1	1,6%
Exfoliative cheilitis	2	1,6%	1	1,6%
Meteorological cheilitis	9	7,5%	8	13,3%
Folded tongue	6	5,0%	3	5,0%

Desquamative glossitis	5	4,1%	1	1,6%
Traumatic erosion	2	1,6%	5	8,3%
Leukoplakia flat	7	5,8%	4	6,6%
Mild leukoplakia	7	5,8%	3	5,0%
Chronic lip crack	9	7,5%	8	13,3%
KPL, typical form	8	6,6%	4	6,6%
KPL - exud-hyper. the form	8	6,6%	5	8,3%
Herpes	14	11.7%	6	10,%
CHRAS, aphthosis of Mikulich	90	75%	0	0
CHRAS, Setten's aphthosis	30	25%	0	0

All examined patients have complaints of discomfort, pain during eating and talking, the presence of "ulcers" in the oral cavity - 76%, dry mouth - 7%, and of course the intensity of the pain syndrome depended mainly on the number of elements of the lesion and localization. When examining PR, all the examined patients had aphthae, soft to the touch, painful on palpation, located on the background of a hyperemic spot of a round or oval shape, covered with a fibrinous grayish-white coating, which could not be removed during scraping, and when the plaque was removed by force, the resulting epithelial defect bleed. In addition, 66% of patients showed some swelling of the SOP, 34% of the surrounding SOP was not changed, and the color of the mucous membrane was pale pink; 19% of patients noted increased salivation, about 5% - dryness of SOP.

When examining the PR, the aphthae were localized in CRM in 48% of cases - transitional folds, in 29% of cases - on the lateral surface of the tongue, in 12% of cases - on the CO of the upper and lower lips, in 7% of cases - on the CO of the cheeks, in 2% - on CO of the bottom of the PR, in 1% - in the CO of the retromolar region and in 1% of cases - in the CO of the soft palate; as well as in 59% of cases, the elements of the lesion were localized simultaneously in several sections of the SRO. Of all the detected aphthous lesions, 42% of cases identified small single aphthae from 3-4 mm to 1 cm in diameter. Aphthae (slightly painful, covered with fibrinous plaque), in 58% of cases, 2-3 sharply painful when touched, coated with fibrinous plaque aphthae with significant infiltration at the base, from 5 to 11 mm in diameter, were detected.

In 17% of cases in patients of the 1st group, in 4% of cases of the 2nd group of patients, changes in the general condition of the body were noted with manifesting in subfebrile temperature, malaise, decreased appetite, and irritability.



Photo No. 1. Patient S.K., 43 years old.

And also, when examining PR in 20% of patients, the 1st group was identified, 27% of cases the 2nd group of patients revealed cermet and solid cast orthopedic structures in the PR., 30% of patients with the 1st group; 22% of patients of the 2nd group examined periodontal disease.

As a result of the study, the intensity of dental caries in patients in the 1st group according to the KPI index was 14.61 ± 0.8 ; the constant "K" was equal to 5.48 ± 0.4 (35.7% of its value), the constant "P" - 6.86 ± 0.8 (42%), the constant "U" - 3.44 ± 0.2 (21%): The level of dental filling turned out to be high in patients with CHRAS with CRF pathologies (PEC - 0.67 ± 0.06): in the 2nd group, this result was 11.48 ± 0.6 ; - 3.68 ± 0.6 (27.6%), "P" - 4.44 ± 0.4 (36.36%), "U" - 4.64 ± 0.2 (36.36%) . The intensity level "P" and "U" turned out to be higher than "K" in patients with CPAS without pathologies of chronic renal failure (PEC - 0.47 ± 0.06).

0.2 ± 0.1 , in the 2nd group of the CRPD was 1.42 ± 0.1 The OHI-S index in patients was; 1st group 1.96 ± 0.06 ; 2nd group 2.6 ± 0.08 : Hygienic condition of the PR 1st group on average was unsatisfactory; 2nd group is satisfactory: the results of the CRPD in the 1st group of patients was 1.68

The relationship between CPAS and inflammatory manifestations in the pathology of the urinary system in patients with CPAS compared with the 2nd group ($p \leq 0.01$) were found local clinical manifestations of the inflammatory process in the urinary tract.

IV. Discussion

We know that today, the gold standard for diagnosing any infection is to use direct methods, such as bacteriology, virology and real-time PCR. According to the result of identification of pathogens; Group 1, chlamydia by PCR was detected in $46.6 \pm 2.88\%$ of cases, direct ELISA revealed chlamydia in $33.6 \pm 3.84\%$ of cases, and ELISA analysis in $24.4 \pm 2.46\%$ of cases .

Patients of the 1st group during the examination - PCR - in 27.6% of cases of chlamydia were found in scrapings. from cervix and 27.1% of cases were found in scrapings, from the urethra; Mutual fund - in 7.3% of cases found in scrapings, from cervix and 25.4% of cases found in scrapings from urethra; ELISA - IgG was detected in 14.8% of cases.

As a result, the determination of mycoplasma hominis in the 1st group of patients, the best results were shown by PCR method ($46.2 \pm 2.8\%$ of cases) and bacteriological culture on liquid diagnostic media ($46.2 \pm 2.6\%$ of cases), and ELISA appeared in third place ($23.8 \pm 6.4\%$ of cases).

According to the results of detection of pathogens in the RG with detection in other biosubstrates, such as blood and epithelial scrapings, it turned out that the detection of pathogens in the blood is comparable to the detection in mixed saliva ($p = 0.48$) and significant differences were found in the blood ($p < 0.0001$) (Table No. 2)

Detection of urinary tract pathogens in CRAS in different biosubstrates by various methods.

Method	Bio substrate	Chlamydia trachomatis		Mycoplasma hominis		Ureaplasma urealitikum	
		+*	-**	+	-	+	-
PCR n-120	Scraping эпителия	100%	0%	100%	0%	100%	0%
	Blood	82±4,8%	18±4,8%	80,2±5,9%	15,4±5,1%	69±4,3%	26±5,3%
	RJ	81±3,2	14±3,5%	87,9±2,9	10,1±4,2	80±3,4	17±4,4

* "+" - a positive result

** "-" - negative result

According to the results of the table, it can be assumed that, in patients with CHRA, chlamydia trachomatis, ureaplasma urealitikum and mycoplasma hominis are significantly more often found in scrapings of the epithelium compared to mixed saliva.

According to the frequency of detection of urogenital infection in patients, the 1st group of 120 examined amounted to; Neisseria gonorrhoeae - 2; Trihomonas vaginalis - 20; Chlamydia trachomatis - 56; Candida albicans - 55; Mycoplasma hominis - 66; Gardnerella vaginalis - 60; Herpes simplex virus - 57; Papillomavirus hominis - 34; Cytomegalovirus hominis - 32; Corynebacterium spp. - 29; Enterobacteriaceae - 31; Peptococcus spp. 21; Ureplasma urealyticum - 56; Streptococcus spp - 45; Staphylococcus spp - 58; Esherchia coli - 33; Enterococcus spp - 30 from the results shows that among the causative agents of urogenital infection in women with CPAS, chlamydia trachomatis, mycoplasma hominis and ureaplasma urealitikum predominate.

From the immunological point of view, practically mucous membranes in RP have a single specificity. Mucous membranes are in direct contact with the external environment, and therefore their main functions are barrier and informational.

According to the results obtained, we were able to attribute cell representation in the form of antigen-specific T and B lymphocytes to adaptive immunity factors and specific antibodies (IgG, IgA, IgE, IgM and IgD) are formed. According to the data, it can be assumed that, CO of the upper respiratory tract serve as a physiological barrier for various pathogenic agents. The aggressive properties of the pathogen can only be realized if these barriers are violated. Therefore, the disease and its relapses serve as an indicator of various immunopathological conditions. In addition, according to the results, it was found that in healthy individuals the amount of IgA and IgG in the RJ, as well as the value of Kcb. much lower than in patients with chlamydia.

Thus, urinary tract infections in patients with CPAS exacerbate the development of local inflammatory processes, on CO, initiating the clinical manifestation of the process. All this leads to the aggravation of HRAS, the main link in the pathogenesis of which is a violation of the immune status, which leads to metabolic disturbances, causing new relapses of HRAS. The following clinical manifestations (regional lymphadenitis (97%), Mikulich aphthosis (75%), Setton aphthosis (25%), the simultaneous appearance of aphthae in different parts of the CRS are observed significantly more often ($p < 0.06 \pm 0.031$, OHI-S index 2.65 ± 0.001) in patients with CHRAS against inflammatory pathology of the urinary tract) 68%), swelling of the SOP (58%), a high level of intensity of dental caries (PEC-0.37-0.06), KPI was 1.96.

In the presence of CPAS, bacteria predominate (68%), viruses are less common (55%); including Chlamydia trachomatis (73%), Mycoplasma hominis (68%), Ureaplasma urealyticum (56%), Herpes simplex virus (57%), Papillomavirus hominis (23%), Cytomegalovirus hominis (17.6%).

V. Conclusion

The main pathogenetic factor in the recurrence of infection in CHAS is immunodeficiency of T-cell and B-cell units, which has individual characteristics and a significant scatter of indicators. Each patient with CPAS, which causes dysfunctions of polymorphonuclear leukocytes, including the ability to carry out phagocytosis of pathogens,

which contributes to their persistence, reproduction and active distribution of lymphogenous and hematogenous pathways throughout the body.

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