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"The Modulation Of Oral Disease Development By Factors Of The Local Immune System In Individuals Presenting With Chronic Renal Insufficiency."

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Relevance of the topic. In many cases, systemic diseases show their first signs in the oral cavity. Currently, dental diseases are most closely studied in patients with chronic renal failure at different stages.
Key words: chronic renal failure, periodontitis, lactoferrin, chronic kidney disease.

Clinical and experimental studies have shown that lactoferrin is involved in the pathogenesis of oral diseases.

Dental diseases, in particular inflammatory periodontal diseases, are more severe in the presence of other diseases [1]. Changes in the oral cavity are often caused by diseases of the genitourinary system. Researchers have found a way to diagnose severe periodontitis at an early stage. In chronic renal failure (CRF), inflammatory processes in periodontal tissues do not cause hyperglycemia [2]. At the same time, there are few studies on oral health in patients with chronic renal failure [3; 4; 5], and a wide range of diseases of the oral mucosa are reported, which are likely associated with problems of local immunity [6; 3].

Table 1

Analysis of complaints and examination results of patients with CKD

Complaints and objective changes in the oral cavity in patients with CKD.	Frequency of occurrence
Complaints and objective changes in the oral cavity in patients with CKD.	Frequency of occurrence
bleeding gums, large amounts of soft plaque	80,6%
feeling of dryness in the mouth	48,3%
difficulty eating, burning mucous membranes	3,2%
feeling of halitosis	87%
exposure of the necks of the teeth ½,	63%
above, subgingival calculus	92%
swelling of the papillary and marginal gums, pastiness, hyperemia	78%
Difficulty in wound healing	

Table

Analysis of complaints and objective indicators of examination of patients with chronic renal failure

Complaints and objective changes in the oral cavity in patients with chronic renal failure.	Frequency of occurrence
bleeding gums, large amounts of soft plaque	97%
feeling of dryness in the mouth	89%

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difficulty eating, burning mucous membranes	62,5%
feeling of halitosis	96%
Exposure of the necks of the teeth by ½-⅔	85%
above, subgingival calculus	95%
swelling of the papillary and marginal gums, whitishness	87,5%
Difficult wound healing	100%

In patients with chronic renal failure, the development of immune disorders and infectious complications greatly influences the short-term and long-term prognosis of patients. Therefore, predicting their occurrence is of great importance [1; 7]. Researchers have noted various changes in the immune status of the oral cavity in chronic renal failure. These changes are associated with the activation of innate immune effectors, an increase in the activity of absorption and oxygen-dependent metabolism, a decrease in the number of activated lymphocytes, NK cells, T lymphocytes and their subpopulations in the peripheral blood, an increase in the content of immunoglobulins types A, M and G, a decrease in the activity of lysozyme in mixed saliva is shown in works [7,8].

Since lactoferrin is one of the main components of local immunity, affecting the complement system and phagocytic activity of neutrophils, its biological and diagnostic functions, as well as its content, have been studied in detail [9; 10]. Lactoferrin is found in synovial membranes, cerebrospinal fluid, sweat and other biological fluids [11-16]. Oral lactoferrin has not been recognized as playing an important role in local immunity in chronic renal failure.

The aim of this study was to determine whether lactoferrin contributes to the development of oral diseases in patients with chronic renal failure.

Materials and methods. In the nephrology department of the clinic of Samarkand State Medical University, 40 patients with chronic renal failure (CKD), 40 patients with chronic kidney disease (CKD) without signs of CKD and 10 patients without renal pathology (control group) were examined. Nephrologists diagnosed chronic kidney disease according to standard clinical examination criteria. The dental examination included collecting complaints, conducting objective tests and measuring lactoferrin in saliva. Saliva was collected under fasting conditions using standard methods.

The concentration of lactoferrin was determined by solid-phase heterogeneous ELISA using a set of reagents "Lactoferrin - ELISA - BEST". The concentration of albumin and urea was also determined by a unified colorimetric method using the Albumin-Novo and Urea-Novo reagent kits.

Research results. When examining patients with chronic renal failure, the following symptoms were revealed (Table 1): bleeding gums, dry mouth, difficulty eating, hot mucous membranes, bad breath, S-shaped peeling of the tooth neck, a large amount of soft plaque, over- and subgingival calculus, adhesion and swelling of the papillary and marginal gingiva, hyperglycemia.

When examining a patient with chronic renal failure, complaints were revealed of pain in the oral cavity, impaired taste, dry mouth and difficulties with feeding due to missing teeth (Table 2). Even with minor mechanical trauma to the oral cavity, all patients in this group had problems with wound healing. An objective examination revealed swelling, pustules, papillary and marginal gums, exposed cervix with S-T! in 85%, a large amount of soft plaque above and below the gum, and calculus deposits in 95%. In 87.5%, the gums were whitish and dry.

The amount of oral fluid, immunity and microflora indicate that the oral ecosystem changes under the influence of each of the noted symptoms.

In all three groups of patients, there were no significant differences in the concentration of

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lactoferrin in the oral fluid (5100 ± 14.4 mg/l versus 4828.6 ± 186.9 mg/l in the control group, 4371.7 ± 244.4 at p> 0.05).

However, it should be taken into account that the concentration of the substance in the studied biological substrates depends on the rate of salivation, which averaged 5 ml in the control group, 3 ml in the CKD group and 1 ml in the CKD group. Albumin content was recalculated to determine lactoferrin concentration.

Table 3

Immunological parameters of oral fluid in patients with chronic renal failure and CKD

Options	Control group	CKD	CKD
Lactoferrin mg/l	4828.6 ± 186.9	5100 ± 14.4	4371,7±244,4
Albumin g/l	0.6 ± 0.3	1.8 ±0.7	0,44±0,12
Lactoferrin/albumin mg/l	25289.8 ±5260.8	8343.4 ±2573.1	22676±4021,1

At the same time, the concentration of lactoferrin was 25289.8 ± 5260.8 mg/g albumin (control), 8343.4 ± 2573.1 mg/g albumin in the CRF group and 22676 ± 4021.1 mg/g albumin in the CRF group, which is significant at p<0.05.

Conclusions. 1. Clinical manifestations of oral ecology differ significantly between patients with chronic kidney disease and patients with chronic renal failure. In patients with chronic kidney disease, signs associated with impaired oral ecology predominate, and in patients with chronic renal failure, signs associated with impaired regeneration of soft tissues of the oral cavity predominate.

2. In chronic renal failure, the lactoferrin index changes, which indicates a decrease in local immunity in the oral cavity and progressive destruction of periodontal tissue. These changes indicate the need for preventive and therapeutic measures in the oral cavity before deciding on the treatment of the underlying disease.

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