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Clinical State of Periodontal and Dental Hard Tissues in Patients with Covid

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ABSTRACT: The article discusses the prevalence and structure of oral pathology in patients who have undergone COVID, depending on the severity of the clinical course of the disease. The study showed a high prevalence and intensity of pathology of oral mucosa and periodontal associated with the severity of the clinical course of COVID.

KEYWORDS: COVID, coronavirus, periodontal disease, oral mucosa

I. INTRODUCTION.

The COVID-19 (CoronaVirus Disease 2019) pandemic caused by a new strain of coronavirus, SARS-CoV-2 (severe acute respiratory syndrome coronavirus-2), has caused a rapid increase in the number of cases and high mortality worldwide [1,3,4].

Despite the tropism of SARS-CoV-2 to the lungs, COVID-19 has a high risk of multiple organ failure [1,5,8,9]. COVID-19 is characterized by great variability of clinical manifestations both in the acute phase and delayed COVID-19. It has a significant negative effect on the state of periodontal tissues, oral mucosa due to specific changes in metabolism and immune system disorders [2,4,6,7]. Exposure to SARS-CoV-2 virus and other pathogenic factors that have toxic, proinflammatory and procoagulant effects, which has a negative impact on the clinical course of oral diseases[1,2,5,7,9]. Effective screening and adequate diagnosis are necessary to combat the pathology. Which requires knowledge of the clinical manifestations of the disease. In this regard, we carried out a review and analysis of dental pathology among patients infected with COVID-19.

Purpose of the study: to reveal characteristic clinical and functional state of periodontium, oral mucosa in patients who underwent COVID.

II. MATERIALS AND METHODS

60 patients with COVID of different severity at the age from 30 to 56 years with duration of the disease 3 years±2,5 years took part in our study. Dental examination included diagnosis of caries, evaluation of the condition of proximal contacts, evaluation of the condition of dentures, bridges, crowns and fillings.

General periodontal examination to determine the topography of the gingiva and adjacent structures began with external examination, passing to direct examination of the oral cavity, the condition of the teeth and mucosa.

Statistical processing was performed using parametric (mean value, M+m mean error, Student coefficient, probability of difference P) and nonparametric results processing methods. The results were statistically processed using the Excel computer program for Microsoft.

III. RESULTS AND DISCUSSION

Before treatment, patients complained of pain while eating, speaking, speech disorders, dry mouth, bleeding from periodontal pocket (PC) when brushing teeth, and severe tooth mobility.

In addition to the complaints caused by generalized periodontitis (GP), this contingent of patients had complaints that were not typical for GP: headache, weakness, decreased ability to work, loss of sleep, appetite. The considerable part



(75-80%) of patients complained of paresthesia in the mouth and perversions of taste, consisting in diminished taste sensitivity to sweet, salty and to a lesser degree to sour tastes.

Clearly, these complaints are due to the presence of angiotensin-converting enzyme (ACE) as a receptor for the SARS-CoV-2 virus to some extent explains the pathophysiological relationship between the viral infection and oral conditions.

Visual examination of oral mucosa (OMV) in COVID patients revealed hyperemia of oral mucosa, its thinning, glossiness and, less frequently, turbidity.

Most patients (75%) complained of dryness of mucosa, in 55-60% of patients the tongue was thickly covered with grayish-white plaque.

At stomatoscopic examination of the oral mucous, foci of mucous membrane keratinization, congestive changes of mucosa with the appearance of areas of small and coarse-ribbed relief are revealed. The greatest changes are observed in the area of free and attached gingiva, where areas of bright red hyperplasia are found, spontaneous gingival bleeding and areas of necrosis are noted.

The tongue, as a rule, is densely covered with grayish-white plaque, papillae are dilated. Arterial capillary end is twisted and narrowed, varicose dilation of venous end, stasis is noted.

Objective examination of the gums reveals swollen, brightly colored with cyanotic tint desquamated gingival margin, easily bleeding when probing. Periodontal pockets with profuse purulent-bloody discharge and often with juicy granulations

Teeth are covered with abundant soft plaque there are supra- and sub-gingival tartars. The teeth are considerably mobile and easily displaced. It should be noted that the degree of tooth mobility does not correspond to the depth of the PC.

The results of the general dental examination indicate that patients who underwent COVID in the oral cavity have more frequent diseases of the lips and oral mucosa. Thus, exfoliative cheilitis was recorded in 2 (2.53±1.76%) patients of the comparison group vs. 15(8.67±2.14%) (P<0.05) with the main group, the corresponding frequency of oral candidiasis was 1(1.25±1.25%) vs. 16(9.25±2.20%) (P<0.05) Herpes versus(2.53±1.76%) against 15(8.67±2.13%) (P<0.05); Chronic recurrent aphthous stomatitis(2.53±2.15%) against 19(10.98±2.38%) (P<0.05).

Petechiae on the mucosa of the lower lip, palate, and oropharynx were noted. Herpetiform lesions were represented by multiple, clustered, painful vesicles and unilateral round, yellowish-gray ulcers with erythematous margins, located on both keratinous and non-keratinous mucous membranes. White plaques or red plaques are found on the back of the tongue, gums, and palate in patients with a confirmed diagnosis or with suspected COVID-19. The cause of the appearance of white and red spots or plaques is candidiasis occurring against the background of antibiotic therapy, taking hormonal drugs, deterioration of general condition and decreased hygiene, resistance and dysbiosis of the oral cavity.

The results of the study of the clinical parameters of the periodontal condition in patients who underwent COVID are presented in Table 1.

As can be seen from Table 1, patients with intact periodontium showed spontaneous gingival bleeding not associated with inflammatory processes (trauma of the alveolar gingiva). Patients with moderately severe generalized periodontitis (MCP) against the background of COVID patients had a mean bleeding score of 5,66±0,16 (P<0,01), which corresponded to the II-III degree severity of bleeding (blood spot appearance, as well as filling of interdental space with blood when touching the probe).

There were no intergroup differences in the intensity of bleeding: in group 1 patients it was 5,61±0,25; in group 2 - 5,70±0,22 points (P<0,05).

At the same time, a high score of tooth mobility was established, which amounted to 4.53±0.08 points in patients with moderately severe generalized periodontitis, which corresponded to a tooth displacement of more than 1 mm in the vestibulooral and mesiodistal directions, as well as tooth displacement in all directions.

There were no statistically significant differences in tooth mobility in the test groups of patients: the mean score of tooth mobility in Group 1 was 4.76±0.16; in Group 2 - 4.56±0.15 (P<0.05).

The results of the PC depth study showed that the PC depth according to the applied ball scale of scores in the studied groups of patients, ranged from 4.91 ± 0.14 to 4.77 ± 0.12 ($P < 0.05$) points, which corresponded to, PC depth of 4-6 mm and more than 6 mm. The mean PC depth score was 4.84 ± 0.09 .

In the study of oral hygiene, it was found that the OHI-S scores in both groups of patients ranged from 4.89 ± 0.15 to 4.84 ± 0.12 ($P < 0.05$). The OHI-S index score in GP patients was 4.86 ± 0.07 . According to the accepted ball score such OHI-S index values corresponded to poor and very poor oral hygiene condition.

Study of the degree of gingival inflammation and severity of the destructive-inflammatory process in the periodontium according to the combined gingivo-parodontal index O' Leary demonstrated the presence of an acute pronounced inflammatory process, ulceration and spontaneous bleeding from the gums, corresponding to PC -II - and III degrees.

Table 1.

Group/ Indicators	intact periodontium	1 group n=32		2 group n=34		P
		Me	Q ₁ -Q ₃	Me	Q ₁ -Q ₃	
Bleeding gum (SBI)	$0,10 \pm 0,005$	5,59	5, 43-5,71	5,62	5,52-5,75	$P < 0,0001^*$
periodontal pocket (PC)	0,00	4, 92	4, 79-5,01	4, 77	4,71-4,85	$P < 0,0001^*$
Toothmobility	$0,10 \pm 0,003$	4,75	4,63-4,83	4,57	4,44-4,67	$P < 0,0001^*$
Green-Vermillon index (OHI-S)	0,00	4,85	4,74-4,99	4,82	4,77-4,88	$P < 0,0001^*$
Gingivo-Prodontal Index	$0,62 \pm 0,02$	9, 25	9,02-9, 35	9,10	8,94-9,20	$P < 0,0001^*$

Index indices of clinical symptoms and destructive-inflammatory periodontal lesions in patients who underwent COVID 19

Note: - $P < 0.05$ relative to intact periodontium

The overall severity of the inflammatory-destructive periodontal lesion according to the O'Leary index according to our adopted ball scale was $9,19 \pm 0,11$ points. In the studied groups of patients, the value of the O'Leary index was determined at the levels of $9,26 \pm 0,28$ - $9,12 \pm 0,21$ ($P < 0.05$).

The high scores we obtained for the clinical manifestations of COVID survivors are consistent with the literature data on the severe and aggressive course of COVID survivors.

At the same time, a detailed assessment of clinical manifestations of GP and their evaluation in points allowed to carry out an intergroup comparison of the studied indicators and establish homogeneity of clinical manifestations of GP in the compared groups.

The leading radiological signs of periodontitis were the disappearance of the cortical plate and the appearance of osteoporosis, the presence of various destructive changes in the alveolar bone tissue. The specificity of the radiological picture in patients with COVID was the generalized nature of the lesion, the combination of horizontal and vertical atrophy of the jaw bone tissue, the formation of large bone pockets, dystrophy of the alveolar process with resorption of the interdental septa. All changes in the bone tissue were dystrophic.

IV. CONCLUSIONS

Thus, the study of prevalence and pattern of oral pathology in patients with COVID depending on the severity of the clinical course of the disease has shown the high prevalence and intensity of the oral mucous and periodontal pathology to be associated with the severity of the clinical course of COVID.

Despite the local nature of the lesion, the complex multicomponent pathogenesis of COVID lesions in the oral cavity has not been fully understood.

REFERENCES

1. Белоцерковская Ю.Г., Романовских А.Г., Смирнов И.П. COVID-19 и респираторная инфекция // Эпидемиол. и инф. болезни. – 2020. – №3. – С. 12-20.
2. Бекжанова О. Е., Юсупалиходжаева С. Х. Микробиоценоз полости рта при инвазивной кандидозной инфекции слизистой оболочки полости рта и пародонта // Актуальные проблемы стоматологии детского возраста и ортодонтии. – 2017. – С. 13-16.



3. Даминова Л.Т., Даминов Б.Т., Муминов Д.К. Кардиоваскулярные изменения у больных, перенесших COVID-19, в раннем реабилитационном периоде //Вестник ТМА. – 2021. – №5-С. 63-68.
4. Telugu Maddileti, ThokalaEswar Chand, Vellanki Sai Kiran Reddy,Kamaraju Sai Anurag.Analyzing the impact of COVID-19 on pollutionand forecasting the pollutants levels inIndia. Turkish Journal of Physiotherapy and Rehabilitation; 32(3) P.2109-2119
5. Chintalapudi, N., Battineni, G. and Amenta, F., 2020. COVID-19 disease outbreak forecasting of registered and recovered cases after sixty day lockdown in Italy: A data driven model approach. Journal of Microbiology, Immunology and Infection.
6. Yusupalikhodjaeva S. H., Bekjanova O. E. Pathogenetic aspects of treatment of periodontitis associated with candida infection in patients with diabetes mellitus //European science review. – 2016. – №. 1. – С. 134-135.
7. Yusupalikhodjaeva S. H., Bekjanova O. E. Background diseases at patients with candidiasis of oral cavity mucosa //European Science Review. – 2018. – №. 3-4. – С. 215-219.
8. Yusupalikhodjaeva S. K., Davurov A. M., Qosimova G. I. Nosological forms of candidal stomatitis occurring in patients with diseases of the oral mucosa //5th International Conferenceon Innovations and Development Patterns in Technical and Natural Sciences. – 2018. – С. 47-50.
9. World Health Organization. Coronavirus disease 2019 (COVID-19) situation report – 48. Available at:https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200308-sitrep-48-covid-19.pdf?sfvrsn=16f7ccef_4 [Accessed: March 9, 2020].



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