MICROCIRCULATION DISTURBANCES IN POST-COVIDED PATIENTS WITH TROPHIC ULCERS OF THE MUCOSA OF THE ORAL CAVITY

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Relevance

Currently, the COVID-19 infection caused by coronavirus SARS-CoV-2, poses the greatest danger to life and health of mankind. The Covid 19 pandemic, which has affected more than 400 million people in the world, about 20-30% of patients have experienced the acute phase of COVID-19, do not fully recover and continue to experience post-COVID syndrome (PCS) lasting up to one year. One of these symptoms is the appearance of trophic ulcers on the oral mucosa (OM). One of the likely mechanisms for the development of trophic ulcers in the oral cavity is damage to the endothelium of the capillary bed, which leads to disruption of the microcirculation of blood and lymphatic vessels [2,3,5].

An important non-invasive method for diagnosing the state of capillary blood flow in trophic ulcers of the oral mucosa in patients with a history of Covid 19 is the determination of the microcirculation of tissue vessels [1,4,6].

The aim of the study is to study microcirculation in patients with PCS and trophic ulcers of the oral mucosa.

Materials and methods. The study involved patients of both sexes with a history of COVID-19 and the appearance of a trophic ulcer on the oral mucosa. For control, the study included people without severe background pathology of the same age who were not infected with the virus. 125 people were examined, of which 104 were patients with trophic oral ulcers after COVID-19 and 21 were healthy individuals who were included in the control group. The study included people aged 18-70 years, including 61 men and 43 women. The average age of the examined patients was 56.7±0.9 years.

To study the state of microcirculation in the vessels of the OM by the method of laser Doppler flowmetry (LDF), a laser capillary blood flow analyzer LAKK-02, manufactured by NPP Lazma LLC (Russia), was used. The LDF-gram was processed using the software: the average value of tissue perfusion with blood was calculated - M, "flux" - the standard deviation of basal blood flow

fluctuations - RMS, the coefficient of variation of blood flow - Kv, IEM - microcirculation efficiency index, integral indicator of the ratio of active and passive blood flow modulation mechanisms (conventional units).

Results A functional examination of patients with trophic ulcers for oral mucosa using laser Doppler flowmetry showed that all parameters were obtained using the software of the laser analyzer of capillary blood flow "LAKK-02" and characterized the blood flow microcirculation.

The microcirculation disturbances noted by us in patients with post-covid syndrome associated with trophic ulcers can be one of the most important dominant pathogenetic links characterizing the severity of the disease in this category of patients.

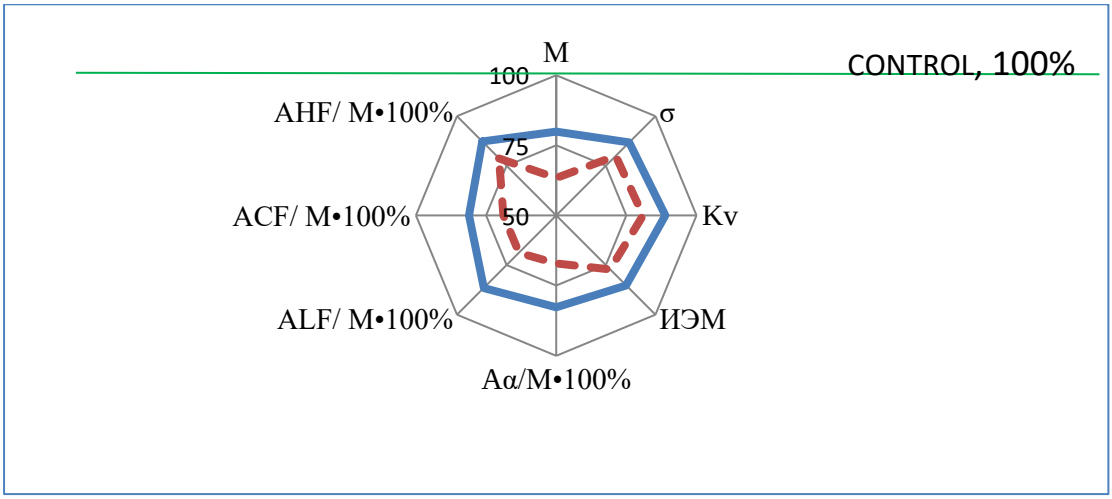

Fig.1 Dynamics of microcirculation parameters in patients with post-covid syndrome (PCS) and trophic ulcers in relation to the indicators of the control group.

Obviously, a significant contribution to the violation of microcirculation in patients who have undergone COVID-19 with trophic ulcers of the OM is made by previously established biologically active substances involved in the activation of damage to vascular endothelial cells, as well as pathomorphological changes in tissues with sclerotic lesions of blood vessels and nerve fibers.

Conclusion

Thus, according to the conducted functional studies to determine tissue microcirculation in patients with post-covid syndrome and trophic ulcers of the oral mucosa, the pathogenetic mechanism of these disorders, obviously, is endothelial dysfunction of damage by inflammatory mediators of the vascular

endothelium, especially in patients after covid pneumonia, which leads to damage to the microvasculature and deterioration of cellular metabolism.

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