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STUDY OF PERIODONTAL TISSUES IN 5-DAY DRY IMMERSION V.K.ILYIN, M.A.SKEDINA, Z.O.SOLOVIOVA, A.A.KOVALEVA

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Abstract

Periodontal disease is one of medical risks in spaceflight, since its incidence in individuals over 35 years of age is up to 40A complex assessment of the condition of periodontal tissues was carried out, including microcirculatory, microbiological and immunological studies under conditions of a 5-day "dry" immersion. Twenty male volunteers (19-26 years) measured the blood flow velocity in the microcirculatory bed of periodontal disease, determined the level of immunoglobulins in the oral fluid, and examined the condition of periodontal microflora. Assessment of blood flow in periodontal tissues was performed by ultrasonic Doppler flowmetry. For this purpose, ultrasonic (US) high-frequency dopplerograph "Minimax-Doppler-K". Measurements were made on the border between the attached gum and the transitional fold from the outside between 1 and 2 incisors on the right and left, on the upper and lower jaw. To determine immunoglobulins (sIgA, IgA, IgM), an enzyme immunoassay method was used. The qualitative composition of the main periodontal pathogenic species of microorganisms was determined by the modern method of molecular biological research - polymerase chain reaction. All studies were performed on an empty stomach, before brushing the teeth on the 1st day (background), on the 5th day of immersion (exit) and on the 7th day after the end of the immersion. On the 5th day of the immersion and on the 7th day after the immersion, there was a decrease in the blood flow velocity in the periodontal tissues in the lower and authentically (p0,05) in the upper jaw. A comprehensive study showed the predisposition of periodontal tissues of subjects under immersion to the development of inflammatory diseases. Under the influence of microgravity, a violation was observed in at least two barriers to the colonization of periodontium. Barrier formed by commensal microflora and initial manifestations in the barrier formed by humoral immunity. The study and analysis of the dynamics of microcirculation, local immunological reactivity and resistance of periodontal tissues, and the composition of oral microflora make it possible to identify important etiopathogenetic aspects of pathology that are of exceptional importance for the prediction, course and outcome of periodontal diseases, and also for the rational construction of preventive measures.