

THE DYNAMICS OF THE FREQUENCY OF POSITIVE TESTS WITH ANESTHETICS IN CHILDREN WITH AN ALLERGY HISTORY DURING THE COVID-19 EPIDEMIC AND MARTIAL LAW

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Abstract. *The aim* is to study the possibility of using the model of positive and negative erythrocyte sedimentation reaction (ESR) to dental anesthetics in children with an allergy history, depending on the degree of reaction in pre-covid (2018–2019), covid-19 (2020–2021) and covid plus military (2022–2023) yr periods to clarify the influence of these exogenous factors on the work of the immune system.

Research methods and materials. An immunological examination of 4536 children aged 5 to 15 years with a positive allergy history (mainly hay fever) was conducted in the period from 2018 to 2023. Dental anesthetics were used as drugs for testing. For a specific laboratory diagnosis of increased sensitivity of a child with a history of allergy to dental anesthetic, an evaluation of the ESR was used using the child's venous blood mixed with a 3.8 % solution of sodium citrate, with the addition of an anesthetic. Mathematical processing of the research results was carried out using the program «Minitab 21» with the use of built-in statistics libraries.

Results. It was established that the COVID-19 pandemic caused an increase in the frequency of positive in vitro reactions in the ESR test to dental anesthetics in children with a positive allergy history, and during military time, this indicator decreases. It was established that in the period from 2020 to 2021, the frequency of positive ESR samples to dental anesthetics probably increases due to II and III degree reactions, however, during the military period, the frequency of positive reactions decreases, which may be related to the negative impact of prolonged stress on immunocompetent cells.

Conclusions. The COVID-19 pandemic caused increased manifestations of allergic activation of immunocompetent cells in children with hay fever in laboratory tests with problematic drugs, and the addition of an additional endogenous factor — chronic stress — led to a progressive decrease in their initial activation.

Key words. children with positive allergy history, COVID-19, stress, immune system, erythrocyte sedimentation reaction.