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Fund “Nauka” Project № 21017 Resume – Competitive-based Session 2021:
“Transcriptome analysis, clinical associations and prognosis in children with postcovid MIS-C”
Project leader: Prof. Boryana Borisova Varbanova, MD, PhD

Multisystem Inflammatory Syndrome in Children (MIS-C) is a rare but potentially fatal condition in childhood, first described in April 2020. In the United States, until October 4, 2021, 5217 cases were described meeting the Center’s criteria for Disease Control (CDC), 46 (2.4%) of whom died. In Bulgaria, there are no exact data on the number of affected children, but the reported cases are about 50, and it is assumed that there are many more patients with a milder course.

MIS-C is a late complication of SARS-CoV-2 infection, with onset of symptoms about 4 weeks after exposure to COVID-19 virus. The CDC and World Health Organization (WHO) criteria require evidence of past COVID infection or contact with a patient, the presence of fever for more than 24 hours, increased acute phase markers, and involvement of at least two organs or systems. In 2021, multisystem adult inflammatory syndrome (MIS-A) was also described.

The aim of the research project is for the first time in Bulgaria to describe clinical and laboratory spectrum of manifestations of the syndrome in both patients with more severe and patients with milder course. Another task is through transcriptome analysis of whole blood to find gene expression in patients with MIS-C, and to compare our results with the scarse data available from the foreign literature, both in patients with MIS-C and in children with Kawasaki disease.

The expected results will contribute to better understanding of the pathogenesis of MIS-C, which in turn will lead to prompt diagnosis and improved treatment.