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MYALGIC ENCEPHALOMYELITIS AS POST-COVID COMPLICATION

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Relevance. Nowadays, a number of COVID-19 patients called COVID-19 long-haulers experience prolonged symptoms described by the common term of post-COVID syndrome and similar to those seen in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS), including fatigue, post-exertional malaise, sleep disturbances and thermoregulation disorders. Therefore, understanding the connection between these conditions could help to understand pathogenesis of the post-COVID syndrome and suggest some treatment measures.

Aim: defining the association between the history of COVID-19 and its possible complications in the form of ME/CFS.

Materials and methods. Information from numerous internet sources and research papers has been analyzed and summarized. One particular case of COVID-19 long-hauler has been investigated in order to confirm the medical hypothesis.

Results and discussion. The analysis of the internet sources and research papers has shown that there are 5 major diagnostic criteria for ME/CFS, each proposing different approaches to the diagnosis. Considering this, the diagnosis of ME/CFS cannot be made based on the post-COVID syndrome symptoms alone. It is also evident from the studies that there are no particular physical signs or biomarkers characteristic of ME/CFS, its pathology being multifactorial. Notably, a viral infection is believed to be one of its most substantial triggers. Thus, SARS-CoV-2 infection could act as a factor in developing ME/CFS. Initially, as a severe physiological stressor, it overwhelms the stress-integrator within the brain — the hypothalamic paraventricular nucleus (PVN), causing it to dysfunction. Secondly, an increased level of autoantibodies against the autonomic nervous system, such as receptor agonists antibodies against β2-adrenoceptor, α1-adrenoceptor, and angiotensin II receptor type 1, may be present in COVID-19, which could trigger neurological and cardiovascular disorders. Lastly, the so-called “hit-and-run” hypothesis suggests infective agents alter immune system function and cause persistent dysregulation of immune, neurologic and metabolic pathways. Presumably, some treatment methods used in ME/CFS could be useful in the post-COVID syndrome.

A case of a 13-year old girl, who has been suffering from the post-COVID syndrome for 18 months, has been analyzed as well. The main patient’s concerns include pronounced thermoregulation disorders (the temperature ranging from 32°C and lower up to over 42°C in the axillary region) and ankle pains associated with impairment of thermal sensation. Blood tests has shown a persistently low lymphocyte count, severe ASO (antistreptolysin O) irregularities in the absence of bacterial infection signs, and lowered LDH (lactate dehydrogenase), it generally considered non-diagnostic. The case study process suggested PVN dysfunction.

Conclusions. As a result of the analysis several conclusions have been made. First, COVID-19 infection could act as an infectious trigger for ME/CFS, which manifests itself in the form of the post-COVID syndrome. Second, as there is no specific treatment for ME/CFS, the treatment for the post-COVID syndrome is mainly symptomatic and not very effective. Third, there is an urgent need for the existence of the post-COVID syndrome itself to be recognized in Belarus for proper management of the patients and improvement of their quality of life.