

MYALGIC ENCEPHALOMYELITIS/CHRONIC FATIGUE SYNDROME: FIRST DESCRIBED COMPLICATION AFTER GAM-COVID-VAC VACCINE

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SUMMARY

Background: Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) is a severe, debilitating chronic disease characterized by marked tiredness and fatigue, cognitive dysfunction, sleep disturbances, pain, and autonomic, immunological, and metabolic dysfunctions, in which all symptoms are usually exacerbated by physical and/or psychological stress.

Subjects and methods: We report a case of ME/CFS with severe myalgia and severe locomotor disorders in a 25-year-old female after Gam-COVID-Vac vaccine (Sputnik V) ten days before the manifestation of the symptoms.

Results: This is the first report of such a complication from the Gam-COVID-Vac vaccine.

Key words: myalgic encephalomyelitis – chronic fatigue syndrome - Gam-COVID-Vac vaccine - case-report - COVID-19

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INTRODUCTION

Myalgic encephalomyelitis (ME) and chronic fatigue syndrome (CFS) are pathological conditions of the body with a large overlap, and therefore they are combined into one nosological form – ME/CFS. ME/CFS is a severe, debilitating chronic disease characterized by marked tiredness and fatigue, cognitive dysfunction, sleep disturbances, pain, and autonomic, immunological, and metabolic dysfunctions, in which all symptoms are usually exacerbated by physical and/or psychological stress. The incidence of the disease in women is 2 times higher than in men. It is more common in adults, but may be registered in adolescents and children. Cases can occur in clusters or sporadically (Bested & Marshall 2015).

ME/CFS is a relatively common illness. It is impossible to reliably estimate the number of patients with ME/CFS. For example, in a Danish population study about 1% of participants reported being diagnosed with CFS (Brinth et al. 2019) but in Japan their amount is about 1/3 of the population (Gandasegui et al. 2021). There is about ¼ million patients with ME/CFS in the United Kingdom, 2 million in the European Union, and up to 2.5 million in the United States (Cullinan et al. 2020, Bested & Marshall 2015).

ME/CFS is becoming a clinical nosology at last. In International Classification of Diseases 11th Revision (ICD-11), it is classified under Chapter 8: Diseases of the Nervous System, within the code 8E49 Postviral fatigue syndrome. It is underlined by an increasing corpus of knowledge of the pathological processes underlying ME/CFS. ME/CFS is a multi-system disorder, with dysregulation of the hypothalamic-pituitary-

adrenal axis and of metabolism of the central nervous system and of other body systems generally (Pheby et al. 2021).

At the moment it is known that ME/CFS may be a consequence after Human Papillomavirus vaccination (Feiring et al. 2017). We describe ME/CFS for the first time as a complication after Gam-COVID-Vac vaccine (Sputnik V).

CASE-REPORT

A 25-years old female patient applied with complaints of severe pain in the muscles (up to 10 points Visual Analogue Scale) during 3 months, weakness and cramps in the leg muscles, severe gait disturbance (like legs “give way”) and muscle fatigue, all the last month gets out of bed in the evening, expressed sleep disturbance - drowsiness during daylight hours and insomnia at night time, migraine headache, articular pain in the hip and shoulder joints. She associated these complaints with the COVID-19 vaccination by Sputnik V 10 days before the manifestation of the above symptoms. Interestingly, the patient has a history of juvenile rheumatoid arthritis.

During the stay in the hospital the patient was totally examined. Mental health was confirmed at a psychiatric consultation. General blood analysis and blood chemistry within reference values. Contrast MRI of the brain and electroneuromyography, including needle myography, found no findings. Anti-AQP4 and anti-GAD antibodies were negative.

Neurological examination revealed the patient was in clear consciousness, well oriented, adequate. There were no cerebral and meningeal symptoms. Narrowing of the left palpebral fissure, pupils were equal, full

eyeball movement, small-amplitude both-sided nystagmus. There were no facial asymmetry and facial pain. The pharyngeal reflex was alive. Deep tendon reflexes were equal and reduced, mostly in the lower limbs. Superficial abdominal reflexes were absent. There were no pathological reflexes. Sensitivity testing found hypoesthesia in the right forearm and both hands. The patient was stable in the Romberg position, she performed coordination limb tests without intention. The muscle strength was reduced in the limbs due to pain with sharp severe pain on palpation of the legs' muscles and the patient cannot move independently. Functions of the pelvic organs without violations.

After the examination of the patient, a clinical diagnosis was formulated: Myalgic encephalomyelitis/chronic fatigue syndrome with severe myalgia and severe locomotor disorders.

DISCUSSION

There is no unambiguous view of the etiology and pathogenesis of ME/CFS, but most researchers agree that the leading role is played by factors of the immune and autoimmune nature. In particular, they are infections and vaccination (Toogood et al. 2021, Sotzny et al. 2018, Rasa et al. 2018). This makes the ME/CFS a possible contender for the rapid increase in cases that will replace the COVID-19 pandemic.

In some reported cases of COVID-19 there were post-viral symptoms characteristic of ME/CFS and some specialists report of similarities between ME/CFS and post-viral COVID-19, and they express the hope that this disease will not be perceived as a psychosomatic disorder (Underhill & Baillod 2021).

This case demonstrates that ME/CFS may be a complication of Gam-COVID-Vac vaccine. Careful screening for COVID-19 vaccination is essential to avoid such complications.

Contribution of individual authors:

Kseniia Manyшева: contribution to writing and to bibliographic research, preparation of the manuscript.

Mikhail Sherman & Natalia Zhukova: revision of the manuscript.

Svetlana Kopishinskaia: conception, contribution to writing and revision of the manuscript.

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