

A MODERN VIEW OF THE PROBLEM OF CHRONIC FATIGUE SYNDROME

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Abstract. The article presents a review of the literature on the problem of chronic fatigue syndrome, and studies the epidemiological and etiopathogenetic features of its development.

Keywords: chronic fatigue syndrome, immune dysfunction, nervous system

Chronic fatigue syndrome is a complex and debilitating disorder characterized by profound fatigue that is not relieved by rest and is often aggravated by physical or mental activity. This syndrome affects a significant number of people worldwide, according to various estimates, from 17 to 24 million people [8,10]. However, it is important to note that a significant proportion of these cases remain undiagnosed due to the complexity of symptoms and the lack of accurate diagnostic markers.

Chronic fatigue syndrome is defined as unexplained feelings of tiredness and weakness that last at least six months and do not improve with bed rest. The disease, which primarily affects the central nervous and immune systems, has been renamed "chronic fatigue and immune dysfunction syndrome" to more accurately reflect the pathophysiological causes of the disease and to distinguish it from the general exhaustion that many people experience after acute or chronic deterioration in health. [4,5]. CFS is believed to be caused by viruses such as Epstein-Barr, herpes, Coxsackie and CMV. This disease involves many components of the nervous and immunological systems. Activation of the immune system in response to exposure to infectious pathogens and dysregulation of the central nervous system, especially the temporo- limbic region, determine the manifestation of the disease in individuals genetically predisposed to it. The limbic system has a far-reaching influence on a person's mental and emotional state, as well as on his ability to concentrate and remember information. As a result, the somatic and autonomic nervous systems are functionally linked, which improves the overall profile of the person. [12,13,15]. Changes in

immunological markers and the prevalence of a wide range of allergic reactions in this group of patients are two indicators of the importance of immune system diseases.

Also, the main role is played by neuropsychiatric factors that trigger immunological dysregulation in genetically predisposed individuals. 80% of people diagnosed with CFS have genetic variants that impair the nervous system's ability to respond to stress, slow the aging process, and fight disease. In rare cases, CFS is considered a distinct subtype of depression. CFS has been associated with immunological abnormalities that may be at least partly due to the presence of concomitant depressive symptoms. Attention deficit/hyperactivity disorder is diagnosed in part because of neuropsychological problems. The occurrence and course of CFS are associated with psychological stress. The theoretical basis suggests that the occurrence of these phenomena may be based on a violation of the neurochemical homeostasis of the brain. [2,12,19].

Chronic fatigue is often viewed as a psychological disorder associated with factors such as lifestyle choices, quality of rest, internal attitudes, and innate human traits and characteristics. This disease is more common in areas with unfavorable environmental conditions, which suggests that it is one of the risk factors. It is a multisystem disease that manifests itself primarily as a negative impact of a number of environmental factors on the central nervous, immune and endocrine systems. To make a diagnosis, patients must experience constant fatigue and a decrease in performance of at least 50% for at least six months while feeling well. In addition, to make a diagnosis, it is necessary to exclude any other diseases that may be the cause of the patient's constant fatigue. For less severe manifestations of the disease in patients, it is proposed to include the following criteria. Similar to the onset of flu, this disease causes a sudden rise in temperature to 38⁰C. There may also be minor swelling and tenderness of the lymph nodes in the neck, head and arms. Muscle weakness, pain in individual muscle groups (myalgia), migrating joint pain (arthralgia), frequent headaches, sudden onset of physical fatigue followed by constant tiredness, sleep disturbances and neuropsychological disorders may also be observed. The full range of symptoms appears suddenly, usually within a few hours to a few days. In addition to the previously described changes in blood pressure,

increased heart rate, rashes on the oral mucosa, tonsils and skin, patients with CFS also exhibit signs of urogenital infection. Diseases of the digestive system, kidneys, liver, heart - these are just some of the physiological problems that can occur with CFS. Allergies, sensitivity to odors, medications and alcohol, unexplained weight loss, night sweats, sensitivity to light, hair loss may also occur [13,20,21].

In addition to testing for viruses and antibodies, patients should undergo mental and neurological health assessments. CFS is associated with both quantitative and functional abnormalities in the immune system. The immune response involves a wide range of small molecules and cell types in the blood, including, but not limited to, interferon and interleukin. Changes in the number and function of T- and B-lymphocytes, decreased cytological activity of killer cells, increased levels of interleukins 1-alpha, 2, 6 and other cytokines, decreased levels of interferon (IF) - all these are symptoms of immune system dysfunction in patients with CFS [16,17].

Recent studies of CFS have included a wide range of clinical and psychological instruments. According to these studies, a common feature of the pathophysiology of this disease is an aberrant response of the brain and immune system to physical and psychological stimuli. There is currently no effective and readily available treatment for this disease. The current medical paradigm is to provide patients with a comprehensive and individualized approach to the treatment of CFS [4,7,11,14]. Over the last century, the problem of CFS has become a serious problem for humanity. Many people, unable to cope with the growing difficulties of life, turn to alcohol and drugs as a passive defense mechanism, seeking refuge in a parallel world of illusory satisfaction. Abnormal behavior, anger, impatience, functional neuropsychiatric problems, increased incidence of illnesses are just some of the negative consequences that some people experience as a result of excessive alcohol consumption. Disruption of the normal flow of energy and imbalance in the nervous system are the main causes of the development of a wide range of pathologies. [12,13,19].

In recent years, the incidence of the syndrome has increased, and according to statistics from numerous studies, millions of people worldwide suffer from it. Various non-specific symptoms associated with viral infection, genetic abnormalities, immune dysfunction, endocrine dysregulation and other disorders have been studied,

but no convincing and definitive answers to these questions have been found. These symptoms include fatigue lasting more than six months, cognitive decline, decreased functional ability, disability and social withdrawal. However, chronic fatigue syndrome is becoming increasingly evident as a serious and important problem for the world's population. [7,13,17].

Diagnosis and treatment of chronic fatigue syndrome are challenging due to the lack of a comprehensive understanding and the diversity of clinical manifestations of this syndrome. The "human factor" in disasters is often related to fatigue, which affects compliance with rules and regulations. With the development of technology and the emergence of new threats to society, the study of chronic fatigue syndrome is becoming crucial to reduce the risks associated with human factors in various fields. [3,18,22,23,24].

Thus, the study of chronic fatigue syndrome in recent times leaves much unknown about its origin, development and the possibility of objectively assessing bodily changes using laboratory and instrumental methods. The variety of clinical manifestations of the syndrome and the difficulty of differentiating them from early signs of other diseases make early diagnosis and prevention difficult, which makes this problem more relevant.

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