



EARLY DIAGNOSIS OF METABOLIC SYNDROME IN MILITARY PERSONNEL.

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Abstract. The relevance of studying the course of metabolic syndrome among military personnel and modern approaches to its treatment and prevention is determined by several important factors. Firstly, modern military service is characterized by high physical and mental stress. Factors such as prolonged stress, service under uncertainty, and repeated training without full recovery negatively impact metabolic processes in the body.

Keywords. Physical and mental processes, arterial hypertension, dyslipidemia, type 2 diabetes mellitus, overweight, high physical activity, stress, eating disorders, lack of sleep and extreme environmental conditions.

Research into metabolic syndrome and its impact on military health is developing as a broad area of research, even within the field of general medicine. Authoritative organizations such as the World Health Organization, the European Society of Cardiology, and the American Diabetes Association have extensively studied metabolic syndrome diagnostic criteria, risk factors, and prevention methods, and regularly update their guidelines. These guidelines also serve as an important methodological foundation for military medicine research (Belete R. Et al., 2021; IDF Atlas, 2019; ADA, 2019; William T.C., Griffin P.R., 2021).

Metabolic syndrome is one of the most complex and not fully understood syndromes in modern medical science; to date, neither its role nor its leading etiologic factor have been definitively established [1]. It is considered in the specialized literature as a condition characterized by a decrease in the biological action of insulin (insulin resistance (IR)), impaired carbohydrate metabolism (type 2 diabetes mellitus), central obesity combined with an imbalance of plasma lipoproteins - an increase in triglycerides (TG), as well as a decrease in high-density lipoproteins (HDL), an increase in very low-density lipoproteins (VLDL) in the blood [1,4,5].

Patients with MS have a significantly increased risk of cardiovascular morbidity (CVD) and mortality. The challenges of diagnosis and management of patients with MS are complex and require frequent revision of standard treatment regimens. Currently, it is extremely difficult to achieve lasting results in patients without a comprehensive approach, including psychological or psychotherapeutic interventions. Despite modern medical advances, morbidity and mortality from socially significant components of MS continue to increase year after year and show no signs of decline [2,6].

Comprehensive treatment includes hirudotherapy, acupuncture, and manual therapy combined with psychological and psychotherapeutic lifestyle modification, including dietary

behavior, in patients with metabolic syndrome (MS). This enhances adaptive capacity and improves quality of life. A study using traditional medicine methods demonstrated that the use of comprehensive treatment with traditional methods effectively corrects metabolic syndrome (AS) with a significant, lasting effect. Keywords: metabolic syndrome, alimentary-constitutional obesity, military personnel, traditional medicine, manual therapy, acupuncture, psychotherapy [3,6,7].

New standards have been introduced for hypertension (HTN) and type 2 diabetes mellitus (DM), which are frequently revised and improved. Developing a unified treatment strategy in the context of the pathophysiological interconnection of several body systems is a complex task, as it requires the simultaneous implementation of multidirectional treatment measures [5].

We analyzed over 3,000 "medical certificates" of male contract officers, including a complete military medical examination from 2022 to 2026 using a continuous random sampling method for each year individually and for the 15-year period as a whole. An analysis of the prevalence of alimentary-constitutional obesity (ACO) among the study population revealed that while only 6% of examined officers had this condition in 2022, the figure rose to 14% in 2025. Subsequently, a steady increase in the number of such patients was recorded (up to 48.7% in 2025). Since 2022, isolated cases of grade III obesity have been recorded among them, and since 2025, grade IV obesity has been recorded. Thus, it can be concluded that there is a persistent trend towards weight gain among contract officers, up to severe obesity levels in the period from 2022 to 2025. Overall, 97% of the officers examined had abdominal obesity combined with illnesses that could be used to verify MS.

In our opinion, the main reasons for the increase in quantitative and qualitative indicators of the prevalence of MS among the surveyed officers of the contract service of the Ministry of Defense of Uzbekistan are: 1. The specific nature of the work of the studied contingent, where their daily work is often associated with special working conditions: prolonged stay in a confined space, features of the organization of food intake, desynchronization, physical inactivity, high psycho-emotional and physical overstrain.

2. Objectively significant socioeconomic conditions contribute to the traumatization of the psycho-emotional sphere of military personnel, as well as the lack of an adequate level of health culture, which influences the formation of "eating behavior," contributing to the development of obesity and MS [4].

For the most effective treatment of MS in military personnel, we proposed the following algorithm:

1. Identification of risk factors for the development of obesity.
2. Early diagnosis of the initial manifestations of obesity and clinical signs of MS development, allowing for adequate prevention and treatment.
3. Comprehensive assessment of the patient's somatic and psychological state.
4. Identification of chronic diseases in military personnel to prevent their mutual aggravation.
5. Use of complex therapy based primarily on non-drug treatment methods and psychotherapeutic correction, but not excluding the use of medications when necessary. The

most effective treatment for obesity is a combination of diet, increased physical activity, and lifestyle changes that include eating behavior and psychological attitudes toward nutrition.

The effectiveness of excess weight treatment is enhanced by the inclusion of psychotherapeutic methods, manual therapy, reflexology, and hirudotherapy. A psychotherapeutic approach to correcting patients' conditions was used, based on the principles of multimodal eclectic psychotherapy, taking into account individual personality characteristics and eating behavior. As a result, in most cases, this approach was successful in promoting changes in the patient's eating behavior and overall lifestyle [1,3].

During the initial visit, a survey and questionnaire are used to identify specific eating behaviors, physical activity, and psycho-emotional status. A psychotherapeutic discussion is conducted with individualized recommendations for correcting eating behaviors, reducing the amount of easily digestible carbohydrates, switching to a lipid-lowering diet, and limiting daily caloric intake. Emphasis is placed on increasing physical activity with an increased proportion of aerobic exercise. Clinical, instrumental, and laboratory examinations are performed, including, in particular, an X-ray of the relevant parts of the spine to identify contraindications to manual therapy in individuals reporting pain in various areas of the neck and back [2,6].

The course of complex therapy included up to 12 sessions, including the use of acupuncture, which proved to be very effective in reducing the feeling of hunger and promoting the development of a different style of "eating behavior." Hirudotherapy is aimed at normalizing the rheological properties of the blood by introducing hirudin and other biologically active substances contained in the secretion of the medicinal leech into the bloodstream. Manual therapy is individually aimed, depending on the severity of motor dysfunctions, at correcting pain, muscle-tonic and myofascial syndromes [2, 3]. Results and discussions The analysis revealed that from 1999 to 2002, cases of obesity of the first or second degree were recorded among the examined officers in 70.6% and 29.4%, respectively [3,7].

In subsequent years, the proportion of obese patients in this category increased. Reflexology led to a significant improvement in psychoemotional state, and, along with psychotherapeutic correction, contributed to the normalization of eating behavior, as well as lipid and carbohydrate metabolism and target blood pressure levels. Most patients receiving manual therapy reported improved sleep, elevated mood, and improved performance[5,7].

Conclusions. 1. An analysis of the dynamics of AKO indicators among contract officers revealed an increase in this pathology over the past 15 years. 2. The use of traditional medicine methods demonstrates their ability to effectively correct AKO with a significant, stable, and long-term effect. In our experience, comprehensive treatment including hirudotherapy, acupuncture, and manual therapy, combined with psychological and psychotherapeutic lifestyle modification, including the "eating behavior" of patients with MS manifestations, leads to increased adaptive reserves and improved quality of life.

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