Modern assessment methods adaptive capabilities of the human body

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In different conditions of life and activity, the human body reacts differently to the conditions of this activity, to climatic factors, environmental pollution, socio-economic conditions, and various stressful situations. Unfortunately, there are more and more stressful situations in modern socio-political and economic conditions. Human diseases, especially chronic ones, are a significant stress factor.

The reaction of the human body to various stressful situations, including illness, depends on its functional state, due to age, psychophysiological characteristics, adaptive capabilities and the accepted methods of influencing the body. The factors listed above create the need for constant self-regulation of homeostasis and the inclusion of adaptation mechanisms for normal human life.

As you know, adaptation is the process of adaptation of the organism to the changed conditions of existence (functioning). The adaptation of a person is based on the set of psychophysiological changes developed in the process of his evolutionary development, aimed at maintaining the relative constancy of his internal environment - homeostasis [1].

When selecting a person for work in extreme conditions, to provide the necessary assistance in stressful situations (passing exams, loss of loved ones, material losses, etc.), for the treatment of various pathologies, an objective assessment of the functional state and adaptive capabilities of the human body is necessary.

To assess the adaptive processes that mobilize the body to adapt to the changed conditions, it is necessary to determine the neuropsychic stability, the nature of immune reactivity, the level of energy processes, the functional state of the cardiovascular, respiratory, and autonomic nervous systems. Modern medicine has a fairly large arsenal of methods for studying various functional systems of the body. However, for a comprehensive assessment of adaptation processes, these methods require research from several specialists. In addition, they are very time consuming and costly, which is essential in a market economy.

Modern energy-information technologies for studying the function of the morphological and characteristics of various systems and organs of a person, his adaptive capabilities (reserves), in a relatively short time (about 60 minutes), allow you to obtain the necessary information that does not require decoding by different specialists.

The foregoing determines the relevance of the use of energy-information technologies to assess the adaptive capabilities of a person.

Materials and research methods

Over the past 10 years, we have conducted more than 3000 studies of the state of functional systems, psychophysiological characteristics, adaptive capabilities (reserves) of the human body using energy-information technologies in healthy individuals (535 people) and in patients with chronic, mainly polysystemic, pathology (2500 people). All examined persons were divided into 3 groups. The first group consisted of military personnel: conscripts - 120 people, contract soldiers who served in "hot spots" - 320 people, cadets of higher military schools - 70 people. The second group consisted of 25 people - operators of video display terminals (VDT). The third group consisted of patients with chronic pathology - 2500 people.

The examined persons underwent quadrant measurements, segmental diagnostics, diagnostics by the method of autonomic resonance test (ART), digital analysis of bio-rhythms, electropuncture research (mainly for patients), psycho-logical testing (mainly for military personnel). For the study of these persons, the hardware-software complex "IMEDIS-FALL" and the digital analyzer of biorhythms "DYNAMIKA-100" were used. Patients with chronic pathology were treated in the clinic of folk and non-traditional methods of treatment of the Main Military Medical Clinical Center "GVKG" of the Ministry of Defense of Ukraine, where, in addition to the above, they underwent standard clinical studies: blood tests, urine tests, X-ray, ultrasound, etc.

Results and discussion of the conducted research

In the group of servicemen, neuropsychic stability was considered an important indicator of the state of regulation of adaptation processes, which was assessed using psychological testing (tests - "Adaptability", "Anxiety level", G. Eysenck - EPI) on a five-point scale. For activities in stressful situations, indicators of neuropsychic stability at the level of 4–5 points were considered reliable. This assessment was received by 94% of the military personnel. The informativeness and predictive reliability of psychological testing according to this method was proved in the study of military personnel before and after the fulfillment of peacekeeping tasks [2]. A high level of adaptation, according to research data on a digital biorhythm analyzer (DAB), corresponded to a high level (5 points) of neuropsychic stability.

It is known that the energy supply of the body significantly affects the performance of healthy people, the course of diseases and the effectiveness of treatment in patients. According to the data of quadrant measurements and segmental diagnostics, it is possible to determine the energy level and state of reactivity of the body, which can be characterized by such concepts as normergy, hyperergy, hypoergy, asthenia. An analysis of the level of energy supply among servicemen of various age groups revealed the following: in the younger age group (18–20 years), persons with hypoergy prevailed (54%), normergy was observed in 30%, hyperergy - in 16%. The best indicators of energy supply were in persons aged 21–30 years: normergy - in 39%, hyperergy - in 20%, hypoergy - in 41% of the studied.

CAB determines the indicators of cardiovascular activity, autonomic balance, central regulation, psychoemotional state, as well as an integral indicator - the level of adaptation of the organism. The complex of energy-informational and psychological studies allows to determine the following levels of adaptation: high, medium, low, failure of adaptation. An analysis of the studies carried out among servicemen showed (Table 1): the level of adaptation was worse in the 18–20 age group, better in the older age groups. The data obtained indicate the relationship between the level of energy supply and adaptation of the body. It should be clarified that the younger age group consisted of the conscript contingent, and the other two - from the peacekeeping contingent, who underwent special physical and moral-psychological training.

Table 1

The level of adaptation of the body of military personnel

Age subjects (years)	The level of adaptation of the body (number of people in%)			
	High	Average	Short	Breakdown of adaptation
18–20	38.2	33,7	28.1	-
21-30	42.3	35.1	22.6	-
31 and older	40.5	36.2	23.3	-

Analysis results energy information research and psychological testing revealed that people with a high level of anxiety and signs of neuroticism were more likely to have hyperergy and sympathicotonia. According to the CAB, these servicemen showed a rapid depletion of energy resources during the study before and after physical exertion. In addition, in persons with hypoergia, parasympathicotonia, a decrease in the ratio of body weight to height, the level of adaptation was lower than in the rest.

The studies carried out made it possible to make an important practical decision: persons who had a low level of adaptation were included in the risk group of maladjustment and were offered training according to a special program that provided for individual psychophysiological characteristics. The quality of training of these servicemen was controlled by repeated studies using energy-informational methods, which can be considered express methods.

The second group of the investigated consisted of VDT operators. Their work experience was 5–12 years, the duration of work with the equipment averaged 7–8 hours a day. They did not comply with the necessary production and hygienic rules for working with VDT. Examination of operators in 10 of them by the ART method revealed an electromagnetic burden of the 4th degree, geopathogenic burden of the 4th degree, which was established using the vegetative resonance test. In addition, this group of people showed a decrease in the level of adaptation to 50-60% (according to the CAB data). The remaining 15 people from this group also had electromagnetic and geopathogenic burdening, but to a lesser degree of severity (3rd, 2nd degree) and a decrease in the level of adaptation by 10–20%. Almost all VDT operators noted the appearance of back pain, general weakness, headache (in 12 people) at the end of the working day.

To improve the general well-being due to electromagnetic and geopathogenic burdens, it is proposed to observe safety rules: adhere to a work schedule and periodic rest, perform a simple set of physical exercises during breaks, and perform hygienic procedures. Using a biotensor and a magnetic device, the workplaces of operators were examined, after which personal computers and other devices with video displays were rationally placed, measures for personal protection against electromagnetic and geopathogenic effects were proposed, as well as measures to increase adaptation processes in the body (medicinal, phytotherapeutic, physiotherapeutic, etc.) etc.). In the future, this group of specialists carried out the proposed recommendations and worked without any complaints about the deterioration of health at the end of the working day.

The analysis of adaptation processes was carried out in 300 patients with chronic pathology, mainly with cardiovascular diseases. 103 (34%) of them had signs of cerebral circulation disorders, 252 (83%) - diseases of the joints and spine, almost all had liver and intestinal dysfunctions of varying degrees. In addition to establishing the main diagnosis of the disease, the state of the immune system, the general level of adaptation and individual functional systems, the state of central regulation (CAB, segmental diagnostics) were determined.

The conducted studies have established: patients with signs of parasympathetic ticotonia, hypoergy, immunodeficiency had a low level of adaptation - 30-15%. In cardiovascular pathology with disorders of cerebral circulation, the level of adaptation was especially low.

The process of health restoration required an integrated (integrative) approach, which we reported at the XVIII conference [3]. Treatment in this group of patients required, first of all, restoration of the level of immune and adaptive processes, detoxification of the body, which was carried out with the help of dietary and drinking regimen, activation of the function of excretory organs and systems, the use of resonant, induction-frequency methods of treatment, and bioresonance homeopathy. This tactic contributed to a faster recovery of the health of patients with such a complex and widespread pathology. but

It should be noted that in patients with immunodeficiency, a low level of adaptation processes, the therapeutic effect was less persistent and therefore required repeated short courses of treatment. In general, the correction of the adaptive capacities of the patient's body significantly accelerated the healing process even with complex chronic pathology.

Our experience in using energy-information technologies, in the development of which the IMEDIS Center plays a leading role, testifies to the advantages and economic feasibility of these methods, since diagnostics and treatment are carried out on the same equipment, and a good effect is achieved in many types of complex pathology.

Conclusions:

1. Qualitative and quantitative characteristics of adaptation processes, energy balance, immune reactivity of the body can be given with the help of energy-information technologies: bioresonance, electro-acupuncture, digital analysis of biorhythms

2. These technologies can be used for research and correction adaptive, energetic, immune processes in the body of special contingents: servicemen of various categories, operators of military personnel.

3. In medical practice, with chronic polysystemic pathology, research and the impact on the processes of adaptation, energy supply, immune reactivity makes it possible to increase the effectiveness of therapeutic measures and accelerate the restoration of health.

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M.G. Maslova, L.K. Kurtseitov Modern methods of assessing the adaptive capabilities of the human body // XIX "- M .:" IMEDIS ", 2013, v.1 - P.14-22