Possibilities of systemic express control over the effectiveness and safety of frequency-resonant effects at the cellular level by the method of fluorescence probing of native blood

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The meaning and ultimate goal of frequency-resonance and other methods of biocorrection is the inclusion of the body's own resources to optimize the work of its regulatory systems, i.e. adaptation mechanisms [one]. The cells of living blood, as in a mirror, reflect the complex biochemical and biophysical processes of this regulation, associated primarily with the work of the neuroendocrine and immune systems. The resulting immune response to a corrective effect and its prolongation in time depends on the initial physiological status of immune cells associated with their energetic (mitochondrial) activity and the level of transmembrane potentials (TMP) [2–4], and also depends on the intensity of reactions of various cellular links and their consistency [3, 5]. In lymphocytes, the main source of energy is mitochondria and the proton membrane potential associated with them [6]. In neutrophils (NF), the level of the external membrane potential associated with Na + / K + metabolism is provided not so much by mitochondria as by the glycolysis system [3, 5] and, therefore, can serve as an additional energy-conjugated characteristic for these cells [7].

Methodology

In order to select the optimal individual tactics of bio- and immunocorrection, it is desirable to be able to assess level cytoimmunoenergetic balance in the same sample of whole native blood. This opportunity is provided by a new microfluorometric (cytophysical) method of blood analysis [4, 8].Based on this method, it is possible to visually recognize different types of cells, platelets and some microorganisms in a native blood smear, identify active mitochondria, and quantify their electrical TMP and mitochondrial activity (MA). At the same time, "energy activity" (EA) an individual cell is characterized by an integral intensity fluorescence (Fph) of the DSM cation probe [9, 10] in the cytoplasm, depending on the sum of TMPs on the plasma and mitochondrial membranes and the number of active mitochondria [11]. Within the framework of this method, the cytoimmunoenergetic balance of the blood is characterized by a base of 12 structural and energy indicators (SEP) cellular immunity: 6 of them - the number of platelets (in the field of view of the microscope) and the relative (in%) the proportion of different populations of immune cells (neutrophils; lymphocytes:T-helpers (T-x), T-suppressors (T-c), B-lymphocytes, natural killer cells (EK)) in the blood, the remaining 6 are the average EA-ty indicators recorded by the Fph probe in each cell of this type and in individual platelets in the same blood smear a given patient on a microfluorimeter (type Lumam I2). On the basis of these experimental data, diagrams of changes in the SEP are constructed (Morozova,

Anoshin, 2001-2004), characterizing the dynamics of their relationship in cellular links against the background of therapeutic effects.

Results and discussion

IN given work received preliminary results, demonstrating sensitivity and informativeness microfluorometric method for dynamic express-control over the state of the SEP in the blood of patients with various pathologies (including viral infections, oncopathology, etc.) with frequency resonance effects (HRV) on the basis of the apparatus "MINI-EXPERT-DT" Center "IMEDIS" (Russia)
(P1) or with bioresonance therapy (BRT) on the complex "More »(Germany)
(P2). The analysis of the obtained blood SES diagrams revealed a specific for different pathologiesthe oscillatory nature of changes in Ff DSM in different links of cellular immunity, associated with fluctuations in their transmembrane potentials. It is essential that the direction and amplitude of these oscillations depend, as a rule, on the ratio of the levels of the initial TMP and MA in different immunocompetent cells and in platelets (regardless of the type of device).
The largest amplitude of TMF oscillations already after 30 min. after the initial session (lasting 60 minutes), in most cases, it is revealedin NF and T-c, platelets.

1) The use of certain time modes of RTC (based on P1),
individually selected for patients with identified forms of chronic infections, led to an increase in EA-ty NF, T-lymphocytes, especially T-c, as well as EK, recorded 2 hours after the first session in a smear of native blood. In this case, the content of cells in subpopulations of lymphocytes may not change significantly. After two or three sessions, these patients are often dominated by the effect of hyper-energization of the B-lymphocyte link,
accompanied by an increase in the number of these cells. Thusthe reaction of immune cells, associated with a change in their electrical TMPs, is ahead of their prolonged structural, population and functional changes, characteristic with an increase in the inflammatory response and antigenic background. At the same time, the growth of EA-ty in the EK and T-c populations may reflect: either the destruction of the viral infection in the foci, or the activation of onco cells against the background of HRV. In some cases, in patients with oncopathology (after 2–3 HRV sessions), temporary depolarization of the NF membranes and a sharp decrease in energization of mitochondria in T-x and EK. The latter indicates to strengthen toxicity in blood plasma, possibly due to food destruction microorganisms and infected foci.

A preliminary analysis of the effects of RTC in the blood showed that for patients with vascular disorders and multiple foci of chronic inflammation, tactics are inappropriate and even dangerous.
sequential in time (1–3 min.) multifrequency inversion resonance attack (total duration 60 min.), aimed at deactivating pathological cells and infection. In this case, the subsequent series of RTC, aimed at maintaining the physiology of normal cells, can give a nonspecific load on the neurohumoral system and cellular immunity, which is manifested in a decrease in the EA-ty of lymphocytes, primarily in the EK and T-x links.You can characterize a similar reaction of the body as

“Energy-informational” stress arising when ignoring the property of non-additivity (nonlinearity) in the response of cellular fields to the “cascade” of successive frequency-resonant impulses.

2) Our research shows on the correlation between increased the tone of the nervous system and the initially high level of TMP and MA-ty platelets. Such platelets are able to capture a minor infection against the background of a weakened phagocytic activity of NF-s. During the use of BRT (on the basis of P2) in pathology combining chronic infection with increased nervous tone, the magnitude of the prolonged BR-effect (3 days after the first session) in certain immune cells "went off scale". In particular, hyperenergization of mitochondria in the T-x population was registered in the blood of such a patient, which was accompanied by an allergic reaction (against the background of a decrease in the activity of NF-s and persistence of a weakly active chlamydial infection). Our experience shows that ensuring the smooth nature of the increase in the energy and population activities of NFs in the blood of such patients leads to a gradual unloading of platelets from infectious toxins and the normalization of their specific functions. It is important to prevent disruption of phagocytosis due to the rapid increase in antigenic toxicity of blood plasma. For todayunderestimated the genetic condition in the nature of the reaction of platelets and the importance of the initial status of platelets in the prolonged systemic response of the body to BRT and HRV.

3) Thus, individual tactics and system strategy (with a combination of BRT and RTC methods), based not only on diagnostic data according to Voll, but also on the cytoimmunoenergetic parameters of the patients' native blood, investigated visually and quantitatively by the method of its fluorescence probing. Preliminary results indicate the advisability of further research into the dynamics of the "energy portrait" of immune and other cells in the blood against the background of HRV and BRT for a more adequate individual selection of the frequency and time modes of these effects, taking into account the nature of prolonged cellular reactions.

4) With the help of television and computer methods cytophysical analysis of native blood smears, new opportunities appear to study the mechanisms of action of specific frequencies and their superposition on various cellular objects in the blood system in vitro and in vivo, and also to provide visual express control over the results of these influences. This is important in terms of choosing an effective and safe therapeutic strategy aimed, on the one hand, at direct deactivation of the infectious background and pathological cells, and, on the other hand, at maintaining the adaptive energy-informational resources of the immune system, which help to reduce toxic side effects for the blood and thus for the body in the whole.

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