



V. I. NAGAJCHUK

## MINOR INTENSITY IN THE FUNCTIONAL REHABILITATION (INFORMATION 1)

Expert of the highest level of NAS of Ukraine, MD, associate professor of the chair of general surgery (Vinnytsia state university named after Pirogov M.I., Ukraine)

*Affected by the use of physiotherapy "factors of low intensity" as information components of energy transformation. The attention that the biophysical transformations at the level of cellular structures depend on the external impact of energy and are focused on functional-vegetative adaptation.*

**Keywords:** factors of low intensity, vegetative adaptation

*Порушена проблема використання в фізіотерапії "факторів малої інтенсивності", як інформаційної компоненти енергетичних трансформацій. Звертається увага що біофізичні трансформації на рівні клітинних структур залежать від зовнішнього енергоінформаційного впливу і спрямовані на функціонально-вегетативну адаптацію.*

**Ключові слова:** фактори малої інтенсивності, вегетативна адаптація

*Затронута проблема использования в физиотерапии "факторов малой интенсивности", как информационной компоненты энергетических трансформаций. Обращается внимание что биофизические трансформации на уровне клеточных структур зависят от внешнего энергоинформационного воздействия и направлены на функционально-вегетативную адаптацию.*

**Ключевые слова:** факторы малой интенсивности, вегетативная адаптация

At the end of the previous century, after several diagnostics had been conducted (ECG, EEG), positive outcomes were noticed after the application of the currents of minor intensity from external sources of power. That is why, the major theme of the Journal, which is directed at the issue of rehabilitation efficiency of the factors of minor intensity (FMI), is quite urgent. First of all, it deals with the methodology of "Bioactivational therapy and rehabilitation", which employs the ability of biological systems to generate current into external, artificially created circuit. This trend was developed in the 80's of the XX century, when the consequences of the traditional physiotherapy would not meet the expectations of experts.

The substantial contribution in its development was made by the founder of the scientific school – Professor Makats V.G. and his followers (Zhuchenko S.P., Gun'ko P.M., Nagajchuk V.V. and others). Thankfully to their efforts, the elaborated trend gained international recognition and was used as the treatment method of the consequences of the Chernobyl disaster and explosion of the product line in BASSR. The elaborated methodology found its place in the therapy of burning injury (combustiology).

As a rule, thermal injury conditions lesion of significant area of skin and vital internal organs. First of all, this lesion appears in the form of functional-vegetative disorders and the critical state of adaptive mechanisms. In this view, rehabilitation of patients with burning injury is oriented at the recovery of vegetative homeostasis and should be conducted at a hospital's burns department from the day of hospitalization to the period convalescence.

The problem of hospital functional-vegetative rehabilitation is connected with the thermal lesion of the skin representative functionally-active zones, which makes it impossible to provide functional-vegetative diagnostics. However, this problem can be eliminated at the outpatient stage of rehabilitation of burns patients, where diagnostics

and correction of vegetative disorders are possible to be provided. The complex rehabilitation practice should include the usage of bioactivation, bioactivational baths, biophoresis of medications in the zone of burns scars, biomagnetic therapy, resonance bioactivation, etc.

The perspectives of the usage of bioactivational factors of minor intensity lie in their relativity to the biophysical characteristics of the organism, orientation at normalization of functional-vegetative equilibrium and liberation from the factors that keep the system of adaptation in tension. In other words, the distinguished rehabilitation factors are comparable with the biophysical parameters of the organism and assimilate with its energy, being transformed into biological diversity.

It is expected, that thematic sections of the Journal will help to fill in the gaps in fundamental researches and the terms of their implementation in medical and rehabilitational practice. Additionally, the Journal appears as the only source of information on the issue of integral diagnostics and correction of vegetative disorders that are essential in functional pathology. It is addressed to the scientists, rehabilitationists, physicians of general practice and students of the higher medical educational institutions – to all who is interested in the previously unknown biophysical reality in the form of “Functional-vegetative sys-

tem of the human” and modern rehabilitational trends with the usage of the factors of minor intensity.

Before the essential material is revealed, it is necessary to pay attention to the following: the problem, which is being lifted, sooner or later will appear in the centre of complex rehabilitation technology. And there are several reasons for this.

1) Vegetative disorders, inherently, are pathogenic essentials of appearance and development of any functional pathology.

2) The trend under study provides for the use of factors of low intensity in rehabilitation practice, and in the essence of influence of these factors underlies informational component.

3) The understanding of the essence of biospheric interdependency and possibility of its informational correction in future will allow humanity to have the only chance for adaptation and survival...

At the same time, we hope that the first steps in this direction will draw attention of experts and become the beginning of serious researches on complex program of informational medicine of the future. We start with providing short information on bio power essence of the factors of low intensity (FLI).

### **“FLI” AS INFORMATIONAL COMPONENT OF ENERGY TRANSFORMATIONS**

First of all we are interested in the factors of energy transformations at the level of high-order living system - human...

Despite the resistance of the apologists of “Newtonian” medicine, contemporary biophysics confirms that in the basis of any biochemical transformation (including the genetic level) lies power-informational component of optical range. So, academician of RANS E. Chirkova argues that:

- the signals that control genetic activity are of wave nature;

- protein structures of living cells generate immune-specific radiation in optical range of electromagnetic (EM) waves;
- nucleic acids are the 'traps' of UV radiation;
- genetic structures of cells possess resonance characteristics...

Among super-molecular structures the most interesting sources of EM-radiation are cellular membranes. At the expense of currents that occur on the background of membrane potentials, may be generation of coherent radiation within the range of 100-1000 GHz.

Analogical meaning of frequency oscillations produces the Josephson effect in protein structures. Oscillations of DNA molecules provoke in water environment impact waves that are accompanied with fluctuation of charges. This leads to the appearance of electric wave, which spreads are oscillation of dipoles of structured water. Because of electrostriction electric wave transforms into the acoustic one and, vice versa, which leads to combined spreading.

At the level of cellular structures transformation of one type of energy into another is possible. Thus, dipoles of water under the influence of variable magnetic field generate oscillations that spread in dense medium of organism as sonic. At the same time length of photon will be in five times lesser than the waves of the initial EM-radiation. It is interesting that the dimensions of cellular structures (15  $\mu\text{M}$ -15nM) are comparable with EM oscillation, which is able to create photons with the same wave length and frequency of 100MHz-100GHz

Today, other mechanisms of cellular power transformations are also known, which actually are the FLI.

1) Orientation and oscillation ferromagnetic particles that were found in adrenal glands under the influence of magnetic field.

2) Valvular orientation of current, characteristic for all membrane structures (*especially of neural and neuromuscular*).

3) Piezoelectric phenomena (changes on linear dimensions of DNA, other macromolecules under the influence electric field).

4) Phenomenon of N-like volt-ampere characteristic of tissues, connected with membrane transformation of direct current into EM oscillations with estimated frequency 0,5-910 Hz (*found in hemoglobin and albumin*).

5) Hall effect – production of electric field during the interaction of direct current with perpendicular magnetic field (*proteins, bacteria, DNA*).

6) Gunn effect – transformation of direct current into high-frequency oscillations (1-10GHz).

7) Makats effects – phenomena of symmetric asynchronicity of FAZ of skin and channel Valvular conductivity.

8) Photo-mechanical and photo-magnetic effects...

Today, it is known that:

- biological structures absorb (radiate) energy of EM waves by portions (quanta);
- mitogenetic and hyper weak radiation of living cells is related to visible EM range;
- coherent radiation of UV range is inherent in living cells, volatility of spectral content of which depends on the phase of cellular cycle.

If to admit, that chemical action of functional groups is connected with appropriate monochromatic radiation, paradoxical phenomena of photo- and radiobiology become

clear, the so called *effects of small doses*. Finally, contemporary physics, on the basis of quantum theory and wave mechanics testifies: Matter simultaneously possesses corpuscular and wave properties (*phenomenon of dualism*).

Membrane-protein reinforced quanta of visible range and UV transmit specific information through functional channels from FAZ to specific cellular aggregations of internal organs and systems. At the same time in the range of their waves there is always the length that imitates the wave of a protein molecule and can include (exclude) this or that gene. Today, it is known that in the wave of 230-320 nM energy of two photons is being accepted by electron, radiated in UV range and is sufficient for destruction of chemical connections and generation of free radicals.

Thus, power transformations at cellular and organ levels are observed as multidimensional complex of fine energies, which depends on external informational influence.

Observing informational component from the point of view of cybernetics, we point out, that it should be natural, material, specific and represent the level of system management, conditioning the laws of its functionality.

With this, we can draw certain conclusions.

1. Dynamically-interdependent stability of functional systems of organism should be viewed from the point of view of general laws of Nature, its EM openness and self-preservation ability.

2. For the influence on biological system components of influence are needed, that are comparable with its biophysical peculiarities.

3. Functional integrity of any complex system is maintained by the interaction of the type "information-energy-information", on which depends the coordination of the control levels.

4. Biophysical transformations at the level of cellular structures depend on external informational influence and are oriented at functional-vegetative adaptation.

5. Systemic paradoxical reactions, as dependent mechanisms of informational control provide coordination and dynamic stability of vegetative homeostasis. They are implemented by the previously unknown functional-vegetative system.

And there is nothing odd in it, since according to theoretical conceptions, insufficiency of influence is being compensated by its informational value only. At the same time, in order to get efficient results, the following is needed.

1. To supply a biological object (organ, system) with durable informational background, this correlates with its biophysical level. Only under such conditions signal of information becomes perceptible and available in the state of functional pathology.

2. Any power-informational factor of influence must be biophysically acceptable, appropriate for the stage of pathological process and maximally simple (*i.e. principally simple hierarchy of complex systems*). In such conditions secondary developments of the majority of pathological processes disappear during correction of the leading rhythms...

And finally more on FLI.

1. All biophysical processes are interconditioned and dependent on biospheres (*Nature requires unity*).

2. Regulation of complex processes requires principally simple management factors (sort of "yes-no; 1-0"). They must be biophysically acceptable for living Matter, existence of which is conditioned by the balance of the factors of activation, regulation and elimination.

3. During incipient danger, the program of Alive prefers “elimination of a part for the sake of preservation of the Whole”...

Biophysical reality of the previously unknown functional-vegetative system and the observed material on FLI founded the question of biogenic generation of energy.

### References

1. Baronenko V., Makats V., Grigorchuk V., Fedotov S. Vliyanie na elektrokineticheskiy potentsial i aktivnost natrievykh nosov eritrotsitov stimulyatsii apparatom BION-1 akupunkturykh sistem zdorovyykh i bolnykh lyudey (V kn.: Elektroforez kletki), // Ufa, 1989. – P 35–39.
2. Gerber R. Vibratsionnaya meditsina (perevod s angl.) // M., Izdatelstvo KOR, 1997. – 560 p.
3. Golant M., Mudrik D., Rebrova T. Spetsificheskie zakony meditsiny, svyazannye s fizicheskimi zakonami sohraneniya energii i eYo preobrazovaniem iz neuporyadochennykh v uporyadochennyye (Sb. dokladov mezhdunarodnogo simpoziuma “Millimetrovyye volny neteplovoy intensivnosti v meditsine” 3–6.101991) // M., AN SSSR, 1991. – P. 539–544.
4. Makats V.G. Biogalvanizatsiya v fizio – i refleksoterapii // Vinnitsa – 1992. – 236 p.
5. Makats V., Nahaichuk V., Makats D., Makats D. Osnovy bioaktivatsiinoi meditsyny (vidkryta funktsionalno-energetichna systema biolohichnykh ob'ektiv) // Vinnytsia, Veles, 2001. – 316 p. ISBN 996-7993-16-7.
6. Podkolzin A., Dontsov V., Poponin V. i dr. Fiziko-himicheskie i biologicheskie osnovy deystviya faktorov malo intensivnosti // Uspehi sovremennoy biologii, T.114, vyip.2, 1994. – P. 32–41.
7. Podkolzin A., Dontsov V., Makats V. “Faktoryi maloy intensivnosti” novyy podhod k lecheniyu i bioaktivatsii organizma (V kn. : Sbornik nauch. Rabot “MMSI 75 let) // M., 1997. – P. 160–161.
8. Funktsionalna bioenerhodiahnostyka stiikosti vehetatyvnoi nervovoi systemy i yii bioaktyva-tsiina korektsiia (po V. Makatsu) / V. Makats, D. Makats, Iu. Laduba, Ie. Makats, A. Vlasiuk. Vinnytsia : UNIVERSUM-Vinnytsia. – 1997. – 100 p. – ISBN 966-7199-06-1.