

observation period ($p < 0.05$). The mucous membrane thickness reliably decreased both in comparison with control - by 12,86 % ($p < 0,05$), and in comparison with the previous period of observation - by 25,38 % ($p < 0,05$) and averaged $167,45 \pm 7,68 \mu\text{m}$. The submucous membrane thickness at the given period of observation was $58,38 \pm 1,41 \mu\text{m}$, which was 33,5% greater than in the control group ($p < 0,05$) and 1,47% less than in the previous period of observation ($p < 0,05$). Thickness of muscular casings was $29,44 \pm 2,66 \mu\text{m}$, which was 24,86 % less than in control ($p < 0,05$), and 7,98 % more than in previous period of observation ($p < 0,05$). The thickness of serous membrane was $14,19 \pm 0,14 \mu\text{m}$, its simultaneous increase by 13,25% relative to control ($p < 0,05$) and decrease by 22,55% relative to the previous period of observation ($p < 0,05$) were noted.

Thus, the use of a complex of food additives - monosodium glutamate, sodium nitrite and Ponceau-4R in a complex leads to changes in the morphometric parameters of the wall of the large intestine of rats and to violations of its structural layers, which are characterized by dystrophic-destructive changes in cells, an increase in the number of macrophages and eosinophils, which are accompanied by the development of interstitial edema with the development of an allergic reaction. Restoration of morphometric indicators due to compensatory-restorative reactions does not occur.

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NANOLEVEL BIOLOGY: INFORMATIONAL ANALYTICAL REPRESENTATIONS OF THE MAGNETOELECTROCHEMICAL THEORY OF METABOLISM, LIFE AND HEALTH

Understanding the essence of the phenomenon of biological life is one of the main unsolved questions of fundamental science. What exactly are the mechanisms and processes that make the molecules of our body alive? How exactly and at the expense of what is this happening? The answers to these questions can allow modern medical science to significantly advance, as they could discover the latest mechanisms of influence on the tissues of the human body in order to prolong their viability and the life of a person as a whole. Science of the 21st century has advanced significantly. The latest knowledge about the organization and principles

of functioning of living matter at the subatomic, atomic, molecular and cellular levels is now available. Today, the fact of the presence of an electromagnetic component in the human body is an indisputable truth, and the determination of the electromagnetic parameters of the human body is already widely used for diagnostic purposes in medicine. Mankind has practically investigated the nanolevel of the structure of matter at the current stage of scientific development, and it has come to an understanding of the field organization of the structure of matter. The scientific opportunity for the further development of medicine has been formed now thanks to the possibility of transdisciplinary implementation of the latest fundamental scientific knowledge. However, there are no generalizing theoretical works in this direction in medicine the essence of the course of metabolism, the phenomena of biological life and health [1]. The aim of the theoretical study was to conceptualize a system of views on the role of internal electromagnetic fields in the human body for understanding. An explanation of methodology. The analysis of the presented data is a fragment of research work of the Department of Internal Medicine and Emergency Medicine of Poltava State Medical University (23, Shevchenko St., 36011, Poltava, Ukraine) on "Development of algorithms and technologies for implementing a healthy lifestyle in patients with noncommunicable diseases (NCDs) based on the study of functional status" (state registration number 0121U108237: UDC 613 616-056-06: 616.1 / 9-03). Scientific work is carried out in conjunction with the following scientific institutions: 1) Poltava State Medical University (23, Shevchenko St., 36011, Poltava, Ukraine), the cooperation coordinator is the Head of the Department of Internal Medicine and Emergency Medicine, prof., DM M.M. Potiazhenko; 2) Shupyk National Healthcare University of Ukraine (9, Dorogozhytska St., 04112, Kyiv, Ukraine), the cooperation coordinator is the Head of the Department of Informatics, Information Technologies and Transdisciplinary Education, prof., DM O.P.Mintser; 3) Lithuanian University of Health Sciences (9, A. Mickevičius St., LT-44307, Kaunas, Lithuania), the cooperation coordinator is Head of Nephrology Department, prof., DM I.A. Bumblyte. General scientific methods (dismemberment and integration of elements of the studied system, imaginary experiment, logical, historical research, analysis, induction, deduction, and synthesis of knowledge) and theoretical methods (method of constructing theory, logical methods, and rules of normative nature) were used in this theoretical study. Results. Performing a systemic medical analysis provided the basis for the main concepts that were formulated in postulates. 12 postulates were formulated regarding the atomic level of the structure of matter and the human body [1]. 26 postulates were formulated regarding the molecular level of the structure of matter and the human body [1]. Conclusions. 1) The life of a biological system is a process

of magnetoelectric activation of its biomolecules, which starts and ensures their biochemical activity (coherent energy channeling - biochemical soliton flow) and determines structural integrity in their collective interaction of a single organism (transportation of solitons by water-energized structures - controlling soliton flow).

2) Modern deepening of fundamental knowledge to the level of the course of magnetoelectric processes at the molecular level in living biological systems is expedient to be fully integrated into medical science with a change of the electrochemical paradigm of metabolism to a magnetoelectrochemical one. This is necessary because a true understanding of the etiology of diseases of internal organs/NCDs requires a clear and correct understanding of what actually happens to the biopolymers of the human body at the molecular level, what transformations occur with them under different conditions and under the influence of various factors of the internal environment, which are determined by the style human life (nature of nutrition, level of physical activity, etc.).

3) Knowledge and understanding of the quantum-mechanical features of the functioning of biopolymers in living systems, the understanding of the essence of their energy functioning, the organization of the form and role of electromagnetic components is clearly the next step to deepening the fundamental knowledge of the pathogenesis of diseases of internal organs with a further approach to optimizing their treatment and prevention. Prospects. A scientific breakthrough in the understanding of the fundamental issues of the organization of matter at the nano-level of its structure opens new perspectives in the further study of the functioning of the human body at the micro-level of its structure. It forms the newest paradigm of ideas about the mechanisms of realization of the phenomena of life and human health. It can warm up fundamentally different ways of therapeutic effects and justify new mechanisms of already known treatment as well (for example, quantum pharmacology, etc.).

References.

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