

Prospects for the development of the theory and practice of information medicine
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Information Medicine This is a branch of medicine in which diagnostics and therapy are based on the study of the information aspect of the biophysical level of regulation of a biological object. This area of knowledge includes methods of traditional diagnostics and bioresonance therapy.

At the stage of the emergence of information medicine, the main task of researchers was to prove its effectiveness and sufficient efficiency for the treatment of patients.

At the present stage of development of information medicine, the main task is, from our point of view, the formation of a strict scientific base, which includes consistent experimental research (physical, chemical, biological and systemic phenomena), the development of theoretical aspects and the formation of an adequate scientific language. The beginning of this stage was laid by the work of Yu.V. Gotovsky and Yu.F. Perov [2].

There are several directions for solving the listed tasks.

1. Theoretical aspects of information medicine and the choice of language for its descriptions

The choice of a uniform base language of description for the phenomena of information medicine is a fundamental task of its development due to the fact that this branch of medicine is a kind of "crossroads of knowledge" where languages that are unlike each other collide: used to describe the life of an organism and used to describe technical devices and the electronic signals they generate. Almost any task of information medicine is solved with the interaction of doctors and engineers. Consequently, a language that is understandable to both is necessary, allowing one to operate with terms that have a "semantic reflection" in both the technical and medical spheres.

From our point of view, such a language may be the language of functional systems (FS) widespread in medicine [3].

Developed by physiologists and physicians, it is the "natural language" of medicine and encompasses the entire body of known medical knowledge.

On the other hand, the FS language is a language that uses the concepts of control theory and information theory. All its concepts are not easily translated into the languages of these theories: they directly constitute their basis. Consequently, the use of the FS language as the basic language of information medicine makes it possible to connect such powerful methods as mathematical and simulation modeling to the solution of its problems [5-7].

Being a language using the concepts of control theory and information theory, the FS language allows you to organize a dialogue between engineers, mathematicians, physicists, chemists, biologists, specialists in mathematical modeling and physicians and at the same time is understandable to each of the specialists in these areas of knowledge.

2. Objectification of the basic phenomena of information medicine

2.1. One of the main problems of information medicine at the current stage of its development is the problem of objectifying the action of an information product and the problem of its objective identification. So far, this problem has been solved only partially, since the procedure for objectifying and identifying the action of an information product includes a subjective factor - an operator who makes measurements and makes a judgment about the effectiveness and nature of its action. A satisfactory solution to this problem requires voluminous experiments to study the reactions of physical, chemical and biological systems (bacterial and cell cultures, fungi, plants and animals) to the effect of information drugs and, ultimately, the development of a system of objective criteria for evaluating the effectiveness, the nature of their action and unique identification.

2.2. An important problem of information medicine at the present stage its development is also the problem of objectifying the assessment and the nature of the controllability of a biological organism with the help of information preparations. This problem includes theoretical, experimental and design aspects.

For example, for the already existing AIC "IMEDIS-EXPERT", the corresponding research program may include the following items:

- study of the phenomenon of selection ("targeting") of an information product to obtain a reproducible result informational influence at all levels of the organization of biological systems;
- study, both theoretical and experimental, of the objective biological component (biological action) of the phenomenon of "inversion";
- study, for the purpose of objectification, the difference between information products obtained using different methods of rewriting;
- Experimental study of the influence at the level of biological systems of information drugs, built in various ways;
- building on the basis of the conducted experiments the theory of perception by the biological system of the information signal and the subsequent reaction to it;
- Carrying out survey work on the creation of sensors that allow to objectively control the result of the biological system's perception of the information signal and the subsequent reaction to it without the participation of a subjective factor (operator).

2.3. An equally important problem of information medicine on the current stage is the creation of information drugs that have a predetermined control effect on the body, which includes both theoretical and practical aspects:

- it is necessary to objectively know which control tasks can be solved by the body with the help of information drugs, and which cannot;
- it is necessary to objectify the method of presentation (type) of a signal that allows the body to solve a particular control problem, including as subtasks the problem of synthesis or, on the contrary, allocation

- (filtering) the required signal;
- it is necessary to objectively identify the classes of processes occurring in nature, information signals about which can allow the body to decide objectified management tasks, to create and experimentally investigate methods of using informational drugs with a pre-projected nature of the impact.

3. Objectification of the subjective factor in information medicine

One of the main tasks of information medicine at the present stage of its development is the task of objectifying the phenomenon of the operator's influence both on the measurement results and on the therapy process.

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