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NEW TECHNOLOGIES IN DIAGNOSTICS AND INTEGRATED TREATMENT
OF
GENERALIZED PURULENT PERITONITIS
(experimental and clinical research)

Thesis for Medical Doctor’s degree

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OBJECTIVE:
Optimize treatment of generalized purulent peritonitis by using of improved surgical methods and applying of bio-informational technologies.

GOALS OF RESEARCH:
1. Research in experiment sanogenic effects of red bartsia extract.
5. Study peculiarities of wound process in intestinal suture, made at generalized purulent peritonitis depending on suture material, type of intestinal anastomosis and intestinal suture in an experiment.
7. Define possibilities of non-linear diagnostics system and method of informational effect by “Metatron” system at local and generalized infectious process.
8. Evaluate results of integrated treatment of generalized purulent peritonitis depending on stage of disease and methods of surgical correction.

PRACTICAL VALUE OF RESEARCH:
Generalization and evaluation of large clinical material allowed formulating of indications for various variants of operations and fulfilling of intestine anastomosis at generalized purulent peritonitis.

Revealed sanogenic effects of red bartsia extract and “Algipor” preparation prove expediency of these preparations using in integrated surgical treatment of generalized purulent peritonitis which is confirmed by decreasing of after-surgical complications number, intestinal suture defects by 36%, non-formed intestine fistula formation by 29%.
Method of abdominal cavity drainage with use of prolonged draining sorption construction at closed method of peritonitis treatment, terms of its applying are proven, which allowed decreasing of after-surgical complications number by 58.4%, avoid forming of intestine fistulas, decrease festering of after-surgical wound by 11.4%, decrease lethality level by 33%.

Diagnostic possibilities of hardware-software system “Metatron” in ascertainment of infectious process etiologic factor are defined. Effectiveness of bio-informational technologies healing effect in integrated treatment of GPP is proven.

Practical appliance of developed diagnostics and treatment principles allowed decreasing number of after-surgical complications and decreasing lethality level in a group of patients with generalized purulent peritonitis.

CHAPTER 1. LITERATURE REVIEW.
1.1. Modern conceptions of purulent peritonitis etiopathogenesis
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1.10. Non-linear diagnostics system (NLS)

Subconsciousness of each human is great: it remembers and knows everything what happened to an organism and what methods shall be applied to heal this organism. We only need to learn how to extract useful information from subconsciousness (L.G. Puchko, 1996).

Until 1993 fundamental science could describe with mathematical equations only four conditions of matter – solid, liquid, gaseous and plasma, i.e. structure of physical body. Studying of phenomenal abilities of human organism such as clairvoyance, telepathy, telekinesis and so on, forced physicists to create conceptions and hypotheses about some unknown to physics fields. Conception of Okhatrin-Itskhakov describing existence of so-called microleptonic holograms around human head become one of the most spread. According to this conception bio-active points (BAP) of human organism radiate particles (microleptons) which are smaller than electrons. Using microleptonic fields human interacts with other people and environment (V.I. Stavitskiy, 1996). But this theory could not satisfy fundamental science. In 1993 our compatriot G.I. Shipov on the basis of Einstein’s equations geometrization created a fundamental physical theory which added another three conditions of matter, giving possibility to describe all seven bodies of a human. Fifth condition of matter is physical vacuum or ether – ether body of a human. Sixth condition – overvacuum: torsion fields or field of torsion which give a possibility to describe our slender bodies (astral one and three mental bodies). Seventh condition is absolute “NOTHING” from which “EVERITHING” arises, allows describing of our spiritual body, existing of energy essences in space and describe many facts from religious experience. Fundamental theory of G.I. Shipov got international recognition and made an attempt to unite knowledge of science and religion into one united picture of the world (L.G. Puchko, 1996).

In modern physics basic theories are quantum theory and theory of relativity. On of consequence of quantum theory is conception about principal interrelationship of all natural phenomena. Theory of relativity shows that mass has no relation to any substance, being one of energy forms which, as dynamic value, related to activity and processes (A.F. Kodjokaru, 1996; H.P. Stapp, 1971).

Theory of entropy logic – interdisciplinary sphere of scientific research of matter – have significantly widened and extended comprehension of biological systems informational
interaction. Theory of entropy logic – one of the most important sections of information theory was developed by T. van Hoven in 1980 (E. Krik, 1988).

Living organisms – from protozoa to human organism – are not isolated, but open systems, exchanging matter, energy and information with environment. According to definition of L. von Bertalanffy, living organism it is not a conglomerate of separate elements, but specific system characterized by organization and integrity, being changed permanently (L. Bertalanffy, 1952). Main problems related to living matter are phenomenon of matter self-organization and non-linearity of processes (I.L. Blinkov, 1996). With regard to proven fact that living organism on a level of material substrate has everything it needs for full regeneration or at least adequate compensation, than aging processes and chronic pathological states and diseases appearance may be related to loss of information necessary for building of correct control signal by an organism (Y.V. Gotovskiy, K.N. Mkhitaryan, 1996). Thus the basis of self-regulation in an organism is information exchange, corresponding construction, transferring and perception on information control signals (G.Y. Myakishev, 1998; P. Schumacher, 1990).

Many researches have proven that main carrier of information both inside bio-object and between separate bio-objects – including between humans, is electromagnetic radiation (EMR) (A.S. Presman, 1997; C.W. Smith, 1984). Possibility to create an electromagnetic radiation generator able to “offer” to bio-system specific algorithm of existence is based on the fact that electromagnetic radiation can directly introduce information to brain, omitting common organs of sense (V.P. Sakhno and co-authors, 2001).

The Institute of Practical Psychophysics scientists managed to achieve qualitative leap – to develop method of active homeostasis control. The following methods were studied: homeopathy, Chinese acupuncture with development by Folle (1950), Morell (1959), Shimmel, Indian Ayurveda and chakras theory, spin theory, phytotherapy and other methods, closing to understanding of “biofield” phenomenon, well-known to humanity from time immemorial (G.N. Pertakovich, 1992, T.V. Zarubina, S.A. Gasparyan, 1999, A.P. Chesnokov and co-authors, 2001).

Attempts of prophylaxis, diagnostics and treatment of many diseases, including peritonitis, made us to address to non-linear diagnostics systems, which introduce additional information about amplitude of disease and allow to judge about disease prognosis, reading information from subconsciousness (V.I. Nesterov, 2001; P. Schumacher, 1990).
The Institute of Practical Psychophysics has created an analogue-free investigation system, which allows tracing any conditions in the body through changes in the wave characteristics of tissues, cells, chromosomes and even ferments and hormones of the body. Non-linear analysis systems (NLS) are the most advanced information technologies available in this century and can be considered the most remarkable and advantageous accomplishment of modern natural science (V.I. Nesterov and co-authors, 2005). The diagnosis equipment is based on the spectral analysis of the vortex magnetic field of any biological object. It is quite unique and unparalleled in the world today. The numerous experiments which have been conducted at the Institute of Practical Psychophysics, have shown a close correlation between the torsion fields and biological systems, specifying that such fields are used in biological systems as the means of both extracellular and endocellular interplays (N.D. Devyatkov and co-authors, 1991). Principles of entropy logic theory (the informational interchange between any systems is carried out distantly, associatively and is selectively by quanta of electromagnetic radiation) allows stating that in biological systems at pathological processes some unstable (metastable) states may occur, at which the probability of system destruction sharply increases (V.I. Nesterov and co-authors, 2005).

The researches of the Institute succeeded in producing this most effective equipment that is capable of tuning to the frequency of the master pulses automatically without human intervention, as well as, detecting and correcting defects and pathologies in organs and body cell on its own through combination of different specifically modulated magnetic oscillations recorded on a matrix (E. Krik, 1988).

The research system provides a unique opportunity of recording the frequency fluctuations of any preparation and comparing of many thousands already held in the PC database with pathological process’ characteristics and thus finds a remedy that has the closest spectral characteristic of the pathological process and selects the most efficient remedy (S. Smith, 1994). After reading the frequency characteristics of the researched biological object, the system compares the degree of their spectral similarity with healthy, and pathologically affected tissue, or infection agents, to obtain the closest pathological process or tendency (A.V. Chuguevskiy, 1980; V.E. Illarionov, 1996; C.B. Fofanov, 1996). “Metatron” system give an opportunity to significantly decrease time of express-evaluation of an organism as a system in a
whole and changes in organs and cells, histological and cytological structures (V.P. Sakhno co-authors, 2003).

All abovementioned allows:
- control effectiveness and results of different therapies;
- evaluate adaptive abilities of organism;
- analyze dynamics of functional state changes of organism during treatment;
- locate primary nidus of functional breach;
- define pathology character, using expert systems;
- predict functional breaches and pathological conditions in organism;
- evaluate basic parameters of homeostasis.

The information on a particular temporary condition of a biological sub is read contactlessly with the help of a digital trigger gauge, which was developed based on modern information technologies and microcircuitry, catching tiny fluctuations of the signals, filtered from the average statistical noise characteristics of the torsion fields, and converted into a digital sequence processed with the help of the microprocessor for transmitting it via interface cable to a PC (V.I. Nesterov and co-authors, 2005).

The scientists at the Institute then became interested in the experiments of Prof. S. Smith of Manchester University who had proved that water could 'remember' the coherent frequencies of the radiation it was exposed in a variable magnetic field, and retain in its structure the information about those frequencies for a certain period of time. It means that an effective correction of the disturbed balance within the body can be mended by means of information recorded on a matrix. Information (2002) preparations (metazodes) are specific combinations of coherent frequencies chosen by the computer and are used to provide ready-made dosage forms with a direct effect. They are produced by means of the apparatus that transfers the frequency (spectral) information taken from the pathology nidus into a matrix (water, alcohol, or lactose). The metazodes have the effect of awakening of the body's own hidden reserves, which accounts for the wide area of influence of the preparations and the absence of harmful side effects when prescribed with conventional remedies (V.I. Nesterov and co-authors, 2001).

The hardware-software system developed at the Institute of Practical Psychophysics enables the production of a preset bioelectrical activity of brain neurons, with this activity as a background it becomes possible to selectively amplify signals hardly detectable against the
statistical fluctuations, and then isolate and decode the information they contain (U.V. Gotovskiy, K.N. Mkhitaryan, 1996). “Metatron” system shows on a display of PC decoded radiation information i.e.: achieve qualitative leap achieved – method of active homeostasis control is developed. NLS analysis system allows revealing within 30-40 minutes: nosologic forms of functional breaches, diseases, carriage of microorganisms and helmiths by patients, differ carriage from active infectious process, taking into account dispersion and entropy coefficients, choose and make the most effective preparations from allopathy, phytotherapy, homeopathy, nutriaceuticals, parapharmaceuticals, reveal allergens (V.P. Sakhno, 2001; V.I. Nesterov and co-authors, 2005).

META-therapy represents influence by a combination of various modulated electromagnetic fluctuations, radiated by “Metatron” system, to an organism (V.P. Sakhno and co-authors, 2003). Theoretical and experimental works that made possible creation of “Metatron” system – non-linear quantum generator, were started in XIX century by genius of electronics Nicola Tesla, and continued by J. Lakhovskiy, R. Rife. Research according to acupuncture point was developed by Professor R. Folle in Germany, in 1950.

Unlike Folle’s electro-puncture diagnostic method in which the energy potentials of organs and systems are measured through biologically active points (BAP) which show the organ condition indirectly (often with considerable error), the NLS method of analysis developed by the Institute of Practical Psychophysics (Director of the IPP – academician of RAMTS, V.I. Nesterov, Doctor of Science) makes an evaluation of the organ condition directly due to the resonance amplification of the radiation signal of the organ under investigation using a non-invasive trigger sensor. “Metatron” system was developed to fulfill mentioned possibilities on the basis of low-frequency quantum generators.

According to G. Selier: “There are two possible ways of every scientific discovering: the first is precise detailed elaboration, the deepest penetration into the subject with help of advanced analytic equipment; the other way is observation of the subject from new point of view, which permits you to reveal unknown earlier sides. First one requires funds and experience; latter one doesn’t need all these things, as a matter of fact only absence of prejudice and habit of thinking in some specific way, which appear after many years of studying, can help here (1960), “… those seeking answers beyond their specialization, often introduce a great
contribution to development of science thanks to their unprejudiced approach” (V.M. Dilman, 1982).

Methodology of informational effect using electromagnetic radiation has not much in common with traditional diagnostics (V.S. Ulaschick, 1994; V.M. Dilman, 1982). The difference is in ideology of methods: traditional medicine still practicing only theory of nervism and neuroreflectory-endocrin-humoral mechanism of external physical factors interaction with bio-object, not affecting problems of informational metabolism in physical communication channels of a human (V.P. Sakhno and co-authors, 2001).

To understand mechanism of electromagnetic radiation informational effect of corresponding parameters and for developing of application methodic in diagnostics, correct orientation in terms and definitions is necessary. First of all regarding external physical factors, in particular, electromagnetic radiation, one shall distinguish energy-informational and pure informational effects, which are equated frequently. According to definition of A.S. Presman, energy absorbed by bio-system in energy-informational interaction is a carrier of information, acting as a signal and causing reaction of a bio-system by means of its own energy resources, pure informational interaction of bio-systems with environment are isolated from its energy exchange (A.S. Presman, 1997).

Method of informational therapy (META-therapy) is a further development in solving of normal vital functions restoration in case of acute and chronic diseases problem.

The system functions according to the principle of the amplification of the initiating signal with the disintegration of the meta-stable systems involved. In terms of physics “Metatron” is a system of electronic oscillators resonating at the wavelength of electromagnetic radiation whose energy is equivalent to the energy breaking down the dominant bonds that maintain the structural organization of researched object.

“Metatron” enables the production of a preset bioelectrical activity of brain neurons; with this activity as a background it becomes possible to selectively amplify signals hardly detectable against the statistical fluctuations (resonance phenomenon).

The information on a particular temporary condition of a biological sub is read contactlessly with the help of a digital trigger gauge, which was developed based on modern information technologies and microcircuitry, catching tiny fluctuations of the signals, filtered from the average statistical noise characteristics of the torsion fields, and converted into a
digital sequence processed with the help of the microprocessor for transmitting it via interface cable to a PC.

The system is designed for simultaneous diagnostics of one patient. Registration of a patient and registering of anamnestic data last not more than 10 minutes. Diagnostics cycle duration is 30 minutes to 2.5 hours. Duration of uninterruptible functioning of the system is 12 hours.

Operation modes of equipment, adjusting and control are provided by computer in accordance with installed software.

Information about diagnostics results of each specific patient is shown on display of a computer, stored in separate file on computer hard drive and can be saved on individual diskette.

“Metaphia” and “Nutrisoft” software are designed for computer non-linear analysis and virtual informational testing; also they can be used for informational preparations (metazodes) manufacturing and for META-therapy. Equipment operating together with mentioned software is registered in certification and licensing of medical activities committee and referred to medical devices class, carrying out diagnostic and healing functions in healing and prophylactic institutions.

System of telemetric data processing for non-linear analysis “Metatron” was used for express – diagnostics of organism condition at GPP by registration of changes in organs, histological and cytological structures, for carrying out of homeostasis condition dynamic control, forecasting of treatment stages and possible complications.

The system is designed for operation only with computing system on the basis of IBM-compatible computers and with software developed by manufacturing enterprise, and it provides diagnostics séance according to algorithm of software.

There is a possibility of data entry according to provisional diagnosis and complaints of patients. The system gives a unique possibility to restore normal vital activity of organs by means of informational therapy method (META-therapy) and to effectively adjust incorrect balance of an organism by means of informational preparations, recorder to a matrix. Informational preparations (metazodes) are specific combinations of coherent frequencies, found by computer, and used to produce ready medicinal forms with directional effect. At the
same time contra-indications for use together with traditional medicinal preparations are absent.

Using of the system in clinics and departments of healing and prophylactic institutions will help to decrease significantly time of patient integrated diagnostics as a system in a whole, at a time evaluate predisposition, presence and interaction of different pathological changes in tissues, organs and systems of checked up patients (V.I. Nesterov and co-authors, 2005).

Chapter 2. Materials and methods of research

Operational principles and instruction for work with “Metatron” system.

Hardware-software system was recognized not only in Russia but also in foreign countries.

Methods

Before check up of a patient, headphones with magnetic inductors shall be place on a patient’s head in accordance with labeling: R – to a right temporal region, L – to a left one. Infrared laser is placed symmetrically against eyes of a patient, not far than 80 cm. Type of research: express research allows carrying out of research on complete topographic cross-cuts without anatomic and histological details within 20-30 minutes; standard research studies separate histological, cytological and genetic structures if there are pathological changes are exist within 50-60 minutes; detailed research evaluates structure of all organism’s tissues at histological, cytological and genetic levels within 2 hours, which may be necessary for extended scientific researches.
Using of “Metatron” system for treatment of patients with GPP and other bacterial infections.

Clinical researches were carried out with use of the system: 30 patients with generalized purulent peritonitis and 50 patients with various bacterial infections were examined; patients were inscribed in studied groups after their diagnosis was defined using laboratory data, including bacteriologic and histological research, ultrasound research results, diagnostic laparoscopy and intraoperative research. Studied group is randomized purposed sampling, which makes acquired results representational for some diseases in a whole. Examination of various bacterial infections carriers was completed. 30 patients (out of 283) with generalized purulent peritonitis in terms of integrated treatment were checked up with “Metatron” system. Thus, to study effectiveness of the system operation, additional 50 patients with various bacterial infections were inscribed into research.

NLS analysis, metatherapy and metazodotherapy in integrated treatment of GPP.

Taking into consideration effectiveness of NLS analysis, informational therapy using “Metatron” system at various diseases, including ability of this method to identify microbial flora in biological object and use healing effect with use of new informational technologies, we applied this methods in integrated treatment of generalized purulent peritonitis, and also traced recovery dynamics of peritonitis and actively influenced it with a view of treatment and rehabilitation period reducing.

We evaluated dynamics of recovery period of patients with generalized purulent peritonitis using non-linear diagnostics system, which quickly, with high quality and accuracy evaluates pathology character in postoperative period of patients from mentioned group. Recovery period dynamics was monitored in two groups of patients.

Software contains numerical score of NLS analysis results:
1 – level of latent functional activity (no pathology)
2 – optimal regulation
3 – characteristics at higher level, regulatory system are strained
4 – asthenisation of regulatory mechanisms
5 – compensated breaches of adaptation mechanisms (reversible changes of organs and tissues)
6 – level of adaptation mechanisms decompensation, significant pathological states (multiple organ failure)

NLS analysis numerical score is shown on picture No. 14.

*Pic. 14. NLS analysis numerical score*

Offered numerical score in greater extent characterizes dynamics of increasing or decreasing of adaptation reserves. Even stable pathological states without marked dynamic changes hardly registered according to this scale.

Picture below shows variant of normal liver and appearing of pathological state at peritonitis on pic. 15.

*Pic. 15. Normal liver and appearing of pathological state at peritonitis.*
Pic. 16. Duodenum mucous layer inflammation at peritonitis and condition of small intestine mucous layer after metatherapy.

To check possibility of such treatment method application as metatherapy and metazodotherapy with “Metatron” system, we carried out monitoring of patients with erysipelas of lower extremities treatment:

1. Pain syndrome removing
2. Achieving of bactericidal effect
3. Achieving of immunomodulating effect.
4. Removing of lower extremities edema by influence on lymphatic vessels and lymphatic nodes.
5. Symptomatic therapy of functional breaches and relative vitally important organs insufficiency.
6. Recovery.

The following formula was offered for evaluation of treatment effectiveness at peritonitis applying integrated treatment by metatherapy and metazodotherapy by “Metatron” system:

\[
\left( \frac{P_{uc} - P_{m}}{P_{uc}} - \frac{P_{uc} - P_{o}}{P_{uc}} \right) \times 100\%
\]

Where \( P_{o} \) – is treatment with “Metatron” system, \( P_{uc} \) – parameter value in absolute values before treatment, \( P_{m} \) – the same after traditional treatment with modulator.

Criteria of treatment effectiveness

In addition to laboratory diagnostics and evaluation of patient’s with generalized purulent peritonitis condition severity, results of treatment were evaluated: number and types of
complications, lethality, clinical evaluation of intestine peristalsis recovery, dynamics of secreted from enterostomy quantity.

Chapter 6. Results of non-linear diagnostics system and method of information effect applying at local and generalized infectious process

6.1. Diagnostic possibilities of “Metatron” system

50 patients with various bacterial infections were examined; patients were inscribed in studied groups after their diagnosis was defined using laboratory data, including bacteriologic and histological research, ultrasound research results, diagnostic laparoscopy and intraoperative research. Studied group is randomized purposed sampling, which makes acquired results representational for some diseases in a whole. Examination revealed carriers of various bacterial infections.

Results of research are shown in table 64.

Table 64.

<table>
<thead>
<tr>
<th>Nosology of disease</th>
<th>Number of patients (total)</th>
<th>Microorganisms revealed in cases of patients with various nosology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Staph aureus</td>
</tr>
<tr>
<td>1. Erysipelas of lower extremities</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>2. Bronchopneumonia</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3. Chroniosepsis</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4. Hematogenous osteomyelitis</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5. Septic arthritis</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>6. Inflammatory disease of skin and subcutaneous cellular tissue</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>7. Conjunctivitis</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8. Furunculosis</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>9. Peritonitis</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>
Accuracy of figures is determined when coefficient of dispersion is from 0.091 to 0.324, and entropy – 7.

In case of lower extremities erysipelas entry of infection is revealed: epidermophytosis (existing for a long time) in 2 cases, chronic skin subcutaneous cellular tissue diseases, osteomyelitis in 6 cases. All patients were treated in surgical hospitals and isolation hospital at regular intervals, with temporary improvement of health condition. Complains of these patients were the following: general weakness, headache, decreasing of ability to work, appetites, pains and edemata in evening in place of inflammation. Two patients were checked up at acute stage of disease: microflora was found in inguinal lymphatic nodes, retroperitoneal space, mediastinum, in blood cells (lymphocytes and macrophages) with the highest coefficient od dispersion (0.036) and entropy (7).

Together with examination of 50 patients using “Metatron” system, also numerous blood inoculations for sterility and bacteriological researches of secreted from fistulas were carried out. Comparative results of bacteriological researches and “Metatron” system research results are shown in Table 65.

Table 65. Comparative results of bacteriological researches and NLS analysis.

<table>
<thead>
<tr>
<th>Method of infectious agent revealing</th>
<th>Number of observations</th>
<th>Microflora</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Staph. aureus</td>
</tr>
<tr>
<td>1. Bacteriologic analysis of blood for sterility</td>
<td>27</td>
<td>5 (18,5%)</td>
</tr>
<tr>
<td>2. Bacteriologic analysis of secreted from wounds, fistulas, etc.</td>
<td>15</td>
<td>8 (53,3%)</td>
</tr>
<tr>
<td>3. Research with “Metatron” system.</td>
<td>47</td>
<td>36 (76.6%)</td>
</tr>
</tbody>
</table>
Note: * - significant differences according to Fisher’s method (d<0.05)

Characteristics of NLS diagnostics of bacterial infections are presented in Table 66.

Table 66. NLS diagnostics of bacterial infections.

<table>
<thead>
<tr>
<th>Bacterial infections</th>
<th>Num. of patients</th>
<th>Accuracy of method, %</th>
<th>Specificity of method, %</th>
<th>Sensitivity of method, %</th>
<th>% of positive results</th>
<th>% negative results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diseased</td>
<td>Carriers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Staph.aureus</td>
<td>7</td>
<td>14</td>
<td>100</td>
<td>98</td>
<td>96</td>
<td>98</td>
</tr>
<tr>
<td>2. Str.Hemoliticus</td>
<td>8</td>
<td>12</td>
<td>93</td>
<td>84</td>
<td>96</td>
<td>91</td>
</tr>
<tr>
<td>3. Str.bovis</td>
<td>5</td>
<td>7</td>
<td>81</td>
<td>73</td>
<td>98</td>
<td>84</td>
</tr>
<tr>
<td>4. Esher.colli</td>
<td>3</td>
<td>6</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>5. Str.pneumonia</td>
<td>5</td>
<td>4</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>6. Bact. Eruginozae</td>
<td>3</td>
<td>7</td>
<td>97</td>
<td>76</td>
<td>100</td>
<td>91</td>
</tr>
<tr>
<td>7. Kingela Kinge</td>
<td>2</td>
<td>3</td>
<td>68</td>
<td>100</td>
<td>95</td>
<td>87,6</td>
</tr>
<tr>
<td>8. Protey vulgaris</td>
<td>6</td>
<td>7</td>
<td>88</td>
<td>100</td>
<td>100</td>
<td>96</td>
</tr>
<tr>
<td>9. Shigella Zonne</td>
<td>1</td>
<td>3</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>10. Salmonella</td>
<td>1</td>
<td>2</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>paratyphimurium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Treponema pallidum</td>
<td>1</td>
<td>-</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>12. Mycobacterium</td>
<td>2</td>
<td>5</td>
<td>74</td>
<td>68</td>
<td>96</td>
<td>79,3</td>
</tr>
<tr>
<td>tuberculosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Helicobacter</td>
<td>3</td>
<td>7</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>pilori</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>77</td>
<td>86,2</td>
<td>86</td>
<td>92,4</td>
<td>88,2</td>
</tr>
</tbody>
</table>
Table 66 shows great variety of microorganisms which were revealed by NLS diagnostics. At the same time accuracy of this method is 86.2%, specificity – 86%, sensitivity – 92.4%. Results are positive in 88.2% of cases, 11.8% are negative. Time for one patient check up is from 30 minutes to 1 hour. Using this method Helicobacter pilori revealed in 20% of cases, when immune-enzyme analysis reveals up to 100% of cases. This method can be regarded as accurate at revealing of enteric infections, golden staphylococcus, streptococcus, syphilis when accuracy rate is 100%.

Thus NLS diagnostics method is rather informative in revealing of various bacterial infections, but it needs further researching and updating of applied diagnostics methods.

Pic. 41. Results of surgical bacterial infections revealing by various methods comparing to NLS analysis.

Presented data of “Metatron” system on pic. 41 in comparison with bacteriologic research of exudation and blood prove high accuracy and comprehension of NLS analysis. 2, 3 or 4 infectious agents were revealed in case of one patient. Bacteriological verification of microorganisms from wounds, fistulas, phlegm was proven in 92% of cases by “Metatron” system. Bacteriological research of blood for sterility appeared to be positive in 3% to 27% of cases. It can be explained that researches were carried out together with combined treatment by antibiotics.
Research allowed to fulfilling of monitoring program at given disease.

In all cases positive dynamics of disease course with surgical infection was reported. Repeated (4 or 5 times) metatherapy resulted in recovery in relatively short terms. Comparative data of traditional methods of treatment and with use of “Metatron” system is shown in Table 67.

Table 67.
Comparative data of traditional methods of treatment and with use of “Metatron” system.

<table>
<thead>
<tr>
<th>Effectiveness of surgical bacterial infections treatment, comparative characteristics</th>
<th>1.2 – GCS n=38</th>
<th>1.2 - OG n = 30</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Period of temperature reaction normalization</td>
<td>10-14 days</td>
<td>5-6 days</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>2. Intoxication signs disappearing terms</td>
<td>20-30 days</td>
<td>6-7 days</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>3. Pain syndrome elimination</td>
<td>10-20 days</td>
<td>1-3 days</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>4. Peritoneum inflammatory reaction disappearance</td>
<td>30-40 days</td>
<td>6-10 days</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>5. Intestinal abscess appearing</td>
<td>4(10%)</td>
<td>_</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>6. Recovery</td>
<td>30-40 days</td>
<td>13-15 days</td>
<td>&lt;0,05**</td>
</tr>
<tr>
<td>7. Restoration of ability to work</td>
<td>40-50 days</td>
<td>18-20 days</td>
<td>&lt;0,05**</td>
</tr>
</tbody>
</table>

Note:* - significant differences according to Mann-Whitney (d<0.05).

Clinical observation example.

Patient K., 45 years old, case history № 673 was moved from gastroenterorrhagia department to surgical department of the district hospital where she was examined on the case of abdominal pains, bloating, stool and gas retention. After appeared repeated vomiting and surgeon consultation she was transferred to surgical department. Patient complaints were the following: abdominal pains, bloating, stool and gas retention, repeated vomiting with a touch of bile, general weakness. She was ill for 2 months when abovementioned complaints appeared. In anamnesis – hysterectomy operation after myoma operation 2 years ago and adhesive obstruction operation 3 months ago. General condition on the arrival time is average, she is emaciated, tongue is dry with yellow coating, the abdomen is swollen with pains in all regions, rumbling can be heard from distance. Roentgenogram shows multiple liquid layers. The diagnosis is acute intestinal obstruction, GPP. After examination with “Metatron” system endometriosis is diagnosed. After preoperative preparations the midline laparotomy is executed. Revision showed: small intestine loops are enlarged, they peristaltic limply. In ileum there is tumor-like mass located in 7 cm from ileocecal fold, the mass is of hard elastic consistence, size is 4x5 cm,
completely blocks ileum lumen. Resection of ileum with tumor ileotransverseanastomosis was made. Specimen was sent to histological study. Recovery. After histological study of specimen - ileum endometriosis was found. In postoperative period method of information therapy was applied and repeated diagnostics using “Metatron” device was fulfilled. NLS-analysis re-confirmed endometriosis diagnosis with dispersion coefficient – 0.098 and entropy – 7.

### 6.2. Effectiveness of metadiencephalotherapy and metazodotherapy using “Metatron” system at local and generalized infectious process.

To all examined with “Metatron” system patients methods of informational therapy were applied. Comparative characteristics of the method’s healing effect are shown in Table 68.

Table 68.

Comparative characteristic of GPP recovery period symptoms in main and screening groups.

<table>
<thead>
<tr>
<th>GPP recovery period symptoms and syndromes</th>
<th>Integrated treatment of GPP (GCS), n=38</th>
<th>Integrated treatment of GPP + treatment with “Metatron” system (OG), n=30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperthermia</td>
<td>Lasts for 2 – 3 weeks of recovery period</td>
<td>Normalizes after 2 -3 séances of diagnostics and treatment</td>
</tr>
<tr>
<td>Asthenic syndrome</td>
<td>Remained after discharge from hospital</td>
<td>Decreased after first applying of metatherapy</td>
</tr>
<tr>
<td>Appetites</td>
<td>Slowly recovered</td>
<td>Appears after first applying of metatherapy</td>
</tr>
<tr>
<td>Sleep</td>
<td>Unstable</td>
<td>Appears after first applying of metatherapy</td>
</tr>
<tr>
<td>Enteric spasms, stomachache, bloating</td>
<td>Gradual disappearing</td>
<td>Disappearing after 1 - 2 séances</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>No normalization at a time of discharge</td>
<td>Recovery after 3 séances of metatherapy</td>
</tr>
<tr>
<td>Signs of satellite bronchitis</td>
<td>Remained after discharge from hospital</td>
<td>Disappearing after 3 - 4 séances of metatherapy</td>
</tr>
<tr>
<td>Signs of cystitis, urethritis,</td>
<td>Slowly disappear</td>
<td>Significant improvement after</td>
</tr>
<tr>
<td>pyelonephritis</td>
<td>first applying of metatherapy</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Normalization of liver functions</td>
<td>Slow disappearing of toxic hepatitis clinical display</td>
<td>Toxic hepatitis clinical display disappear after 3 - 4 séances of metatherapy</td>
</tr>
<tr>
<td>Hemogram normalization</td>
<td>Erythrocyte sedimentation rate remained over a long period (after discharge from hospital), lymphopenia</td>
<td>Recovered after 3-4 séances of metatherapy</td>
</tr>
<tr>
<td>Biochemical figures normalization (bilirubin, transaminases, urea, creatinine, albumines)</td>
<td>Slow recovery with continuing infusion therapy</td>
<td>Recovered after 3-4 séances of metatherapy</td>
</tr>
<tr>
<td>Decreasing of peritonitis treatment period</td>
<td>30-48 days</td>
<td>20-30 days</td>
</tr>
<tr>
<td>Quality of life recovery</td>
<td>Slow</td>
<td>Fast</td>
</tr>
</tbody>
</table>

Table 68 proves unbiased advantage of patients with GPP treatment with including of metatherapy and metazodotherapy into treatment program.

**Clinical example:**
Patient B., 45 years old, arrived to surgeon department of district hospital named after N.A.Semashko in February 2004 with the emergent readings. The complaints on the moment of arrival were the following: acute pain in abdomen upper regions, sickness, repeated vomiting with a touch of bile and mucus with no relieving effects, general weakness, body temperature rising up to 39°C. He had fallen ill suddenly, after alcohol drinking abovementioned symptoms appeared. The next day after illness he was transferred to district hospital surgeon department. The condition was grave. Coverlets, mucous membranes are slightly pale and dry. Peripheral lymph nodes are normal. Lung respiration is vesicular without hoarseness. Heart sounds are clear and rhythmic, pulse is 112 beats per minute, blood pressure is 110/60 mercury mm. Tongue is dry with brown coating. Abdomen involved in breathing process, it is strained with pains in all regions mostly in the upper (epigastric) region, Körte's symptom is positive. Shetkin – Blumberg, Meyo – Robson, Holsted, Voskresensky, Razdolsky symptoms are positive. In general blood test leukocytosis is marked; ESR is increased up to 38 mm/h, hemogram is displaced to
the left (p/y – 24) blood amylase is 500 points (Smith – Row method). Survey rontgenography shows distinct pneumatosis coli, diaphragm is high. Ultrasound diagnostics revealed diffuse changes of pancreas, its size is increased. Nasogastric probe was used; intensive infusion therapy is applied in reanimation and intensive care department. Patient’s condition became worse: blood pressure is decreased till 90/60 mercury mm, anuria, bilirubin increasing (54 millimole/l), signs of encephalopathy appeared. On 4th day after beginning of disease patient is taken to operating room. Revision showed: in abdominal cavity up to 500 serohemorrhagic effusion, total necrosis of pancreas and parapancreatic adipose tissue. The following procedures are fulfilled: necrosectomy, drainage of pancreas through retroperitoneal space from the left side by silicone tubes and cigar-shaped drainage. In after-operation period condition of the patient remained grave. Intensive antibacterial infusion therapy appeared to be ineffective. Reported hemodynamics instability, significant hemogram displacement to the left – p/y is 56. Artificial lung ventilation applied to the patient. After 4 days patient is taken to relaparotomy. In abdominal cavity hemorrhagic effusion, necrotic tissues and purulent contents in parapancreatic space are present. Sanation of abdominal cavity and lesser omentum, necrosectomy is carried out. Operation is completed with laparostomy. During next under anaesthetic sanations positive dynamics (after 6th sanation) is reported: necrosis tissues in small amount; abdominal cavity was sanated – single lines of fibrin in serous membranes. Abdominal wall closed with tubes-dampers. In 3 days after abdominal wall closure patient’s condition worsened again: appeared pains in abdomen, bloating, stool and gas retention, leukocytosis, significant hemogram displacement to the left. After research with “Metatron” system – signs of peritonitis, esher. colli, staph. aureus, bacteria eruginosae are found with dispersion coefficient – 0,045 and entropy – 7, which shows high possibility of found process. Relaparotomy revealed generalized purulent peritonitis, significant infiltration in large intestine splenetic node, spleen and pancreas regions. Abdominal cavity sanation and laparostomy are carried out. Effusion from abdominal cavity is taken to inoculation and antibiotics sensitiveness. During next sanation positive dynamics is not revealed, peritonitis is progressing. From infiltration large intestine splenetic node is mobilized. Partial necrosis of its back wall with intestine perforation is revealed. Resection of large intestine splenetic node and colonostomy are carried out. Following sanations show positive dynamics but longer time with artificial lung ventilation, signs of multiple organ failure. Altogether 13 under-anaesthetic sanations of abdominal cavity were carried out. With background of grave patient’s condition NLS-diagnostics carried out again, metadiencephalotherapy in integrated treatment of generalized purulent peritonitis. Normal health condition was restored. Recovery. Bacteriologic research of effusion proved results of NLS-diagnostics. In one year after discharge periodic operation on colonostomy closure and after-operation abdominal hernia were carried out. Recovery.
This example shows a patient with terminal stage of generalized purulent peritonitis, when in integrated treatment NLS-diagnostics method and new computer informational treatment technologies were applied.

**Evaluation of patients with GPP immune system during treatment with “Metatron” system**

We carried out evaluation of metatherapy and metazodotherapy influence upon immune system of patients with generalized purulent peritonitis, which proved that such therapies have immunomodulating effect for patients with peritonitis.

Dissatisfaction with available method of immunotherapy made us carry out this research.

Immunocorrection effect to general parameters of patients with GPP in comparing groups is shown in Table 69.

Table 69.

Comparative characteristics of immunocorrection in comparing groups of patients with GPP.

<table>
<thead>
<tr>
<th>Immunogram index</th>
<th>1.2 – GCS, n=38</th>
<th>1.2 – OG, n = 30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immunity index</td>
<td>% of persons with deviation from normal by 30%</td>
</tr>
<tr>
<td>lymphocytes</td>
<td>860</td>
<td>50*</td>
</tr>
<tr>
<td>k/mcl</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>T-lymphocytes</td>
<td>989</td>
<td>35</td>
</tr>
<tr>
<td>kl/mcl</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>B-lymphocytes</td>
<td>412</td>
<td>13</td>
</tr>
<tr>
<td>kl/mcl</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>IgM, g/l</td>
<td>1.12</td>
<td>46*</td>
</tr>
<tr>
<td>IgG, g/l</td>
<td>11.8</td>
<td>34*</td>
</tr>
<tr>
<td>NBT-test, %</td>
<td>17</td>
<td>60</td>
</tr>
<tr>
<td>ActNBT-test, %</td>
<td>30</td>
<td>23</td>
</tr>
<tr>
<td>Activity coefficient</td>
<td>1.7</td>
<td>46</td>
</tr>
</tbody>
</table>

Note: * - significant differences according to Fisher’s method (d<0.05)

Before treatment 30 patients with GPP in postoperative period (10 – 15 days) had immunodeficiency, manifested by decreasing of T- and B-lymphocytes by 14% – 40% in general,
concentration of antibodies of M and G class by 20% - 25%. According to research we offered a formula for evaluation of therapy with “Metatron” system in integrated treatment at peritonitis:

$$\left( \frac{P_{uc} - P_{m}}{P_{uc}} - \frac{P_{uc} - P_o}{P_{uc}} \right) \times 100\%$$

when \( P_o \) – therapy with “Metatron” system

Example of modulator self-effect calculation by absolute values:

\( P_{uc}=860, \ P_m=658, \ P_o=1178, \ P_m=1010 \)

After applying of traditional treatment with immunomodulator – value is 36%, after applying of metatherapy and metazodotherapy – immunomodulator effect value is 56%.

Conclusion

50 patients with various bacterial infections were examined in order to test possibilities of hardware-software system “Metatron”: patients were inscribed in studied groups after their diagnosis was defined using laboratory data, including bacteriologic and histological research, ultrasound research results, diagnostic laparoscopy and intraoperative research. Carriers of various bacterial infections and great variety of microorganisms were revealed by NLS diagnostics. At the same time accuracy of this method is 86.2%, specificity – 86%, sensitivity – 92.4%. Results are positive in 88.2% of cases, 11.8% are negative. Time for one patient check up is from 30 minutes to 1 hour. Using this method Helicobacter pilori revealed in 20% of cases, when immune-enzyme analysis reveals up to 100% of cases. This method can be regarded as accurate at revealing of enteric infections, golden staphylococcus, streptococcus, syphilis when accuracy rate is 100%.

Together with examination of patients using “Metatron” system, also numerous blood inoculations for sterility and bacteriological researches of secreted from fistulas and wounds were carried out. In comparing groups of patients the most accurate diagnostics of bacterial infections was reported with use of hardware-software system. Thus, NLS diagnostics method is rather informative in revealing of various bacterial infections, but it needs further researching and updating of applied diagnostics methods. Using of informational therapy methods in integrated treatment of generalized purulent peritonitis decreased percentage of complications and lethality, shortened period of stay in hospital.
Immunocorrection carried out (with “Metatron” system) together with integrated treatment of peritonitis allowed to prevent immunodeficiency progressing and to activate cellular section of immune system, to restore bactericidal potential of phagocytes, which is proven by increasing of activity coefficient up to 2.02, increasing of M and G class antibodies level, which include antimicrobial antibodies. Researches that were carried out prove that immunocorrection with “Metatron” system in integrated treatment of peritonitis restore adequate immune response to microbe aggression, at the same time usability, safety, absolute non-invasiveness and availability may significantly widen sphere of this method application.