Materials of Conferences

MEDICAL PLANTS OF THE CHECHEN REPUBLIC – FOR MEDICAL PRODUCTS

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The article goes about the necessity of the researching chemical constitution of the medical plants in the Chechen Republic and about the elaboration of the recommendation on their usage as medical products for human and animals.

For a long time medical drugs and folk-medicine had been the only way of treatment for many kinds of diseases and illnesses; the experience of the Chechen ancestors should not be forgotten as it is a part of our multinational culture.

The people's experience that was handed down from generation to generation can be extremely useful for hundreds thousands of modern ill people worldwide.

Medical plants and advice of well-known sorcerers, healers and herbalists were used by decades of the previous generation; it is the wisdom of our ancestors that we should use.

Nowadays medicine made of natural products alongside with synthetic ones play still an important role. The task of the modern pharmacology is to find active compounds of the botanical and animal extracts and molecular target they influence.

Natural medical products influence the organism of the human with the help of the function unity of living systems. The organism of medical plants that does not have nervous system is full of low-molecular adjusters – hormones.

During the last decades modern post-genomic technologies provided a powerful impulse for elaborating new kinds of medicines and modifying the existing ones.

More than 4000 species of plants grow in the Northern Caucasus. More than 200 of them are used in the modern medicine; more than 1000 are used in the folk-medicine. About 3000 wild plants that grow in the Northern Caucasus have not been studied yet. Their chemical constitution is not known and there pharmacology and biology features are not well-learnt. Because of it the group of natural medicine products cannot be made bigger by new products and nutritional supplements for living organisms (men and animals).

The research includes the information about 396 vascular plants that grow on the territory on the Chechen Republic.

Scientific literature does not provide us with the information about the chemical constitution of the biologically active substance of the medical plants that were studied by the authors. Pharmacologically active substance of the medical plants of the Chechen Republic are to be determined (they are glycosides, aethereal oils, alcaloids, flavonoids, tanning agents, alcaloids, phytoncides, saponins, etc.).

Everything that was said proves that chemical constitution of the useful agents of the Chechen medicine plants should be thoroughly studied and the recommendations on the usage of the medicines for living organisms should be established.

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INNOVATIVE TECHNOLOGIES IN THE DEVELOPMENT OF PROCESSES OF HUMAN LYMPH AND BLOOD HYDRATION IN HEALTH AND CANCER

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Objective of work: define the power of interaction between hydrated ions of energy of linked water biophysical microstructures via nuclear-physical methods, evaluate interaction between molecules of water and a number of chemical elements of multilayer polarized structure of lymph and blood, thermodynamics of a healthy person and patients with cancer.

Methods and materials: 165 adults have been examined. 60 of them were practically healthy (group I), 105 of them were had cancer of lungs, stomach, rectum, womb, urine bladder, lacteal gland (group II). 18 elements were defined in venous blood serum and lymph, taken from hypodermic vessels of lower shin via non-destructive nuclear-physical method. According to international standards (H-4) LASA and also parallel methods of neurone-activation and rhoentgenologic-fluorescent analysis, defined in concentrations of Fe, Zn, Rb, research accuracy was evaluated.

NMR evaluation of spine-grid relaxation (T_1) of hydrogen cores in blood serum and lymph water has been carried out on a small pulse spectrometer "Minispek RS-20" under a resonance illumination frequency 20 MHz and temperature $39 \pm 0{,}1$ °C. Time difference $*T_1$ of probes T_1, evaluated before and after ultrasound processing , allows us to judge a condition of related fraction of water in samples. Is it implied that greater index of $*T_1$ results in a wider related layer. The level of reliable differences in samples is calculated according to t-criterion of Student.

In group I lymph had low indexes of Se ($p < 0{,}001$), Ag ($p < 0{,}05$) in comparison to blood serum. After lyophilic drying of lymph samples

contents of Sb, Cl ($p < 0,001$) was 3–5 times greater than in blood serum, and Rb, Zn, Br, Mg ($p < 0,001$), Hg, Co, Ca, Na ($p < 0,01$), Mg ($p < 0,05$) increased 1,5–2 times. Comparative analysis of most elements in dry remains of lymph has not revealed significant differences ($p > 0,05$) after lyophilic drying.

In group II lymph concentrations of Na, Se ($p < 0,001$), K ($p < 0,01$), Al ($p < 0,05$) had low values in comparison to the same elements of blood serum. Contents of Na, Cl, Al, Co, Br ($p < 0,001$), Ag, Fe, Zn, Hg, Sb ($p < 0,01$), Cu ($p < 0,05$) was increased 2,5–10 times in dry remains of lymph in comparison to elements of dry blood serum mass. Lymph concentrations of Br ($p < 0,001$), Na ($p < 0,01$), Sb ($p < 0,05$) were low, and Mg, Co ($p < 0,001$), Hg, Ag ($p < 0,01$), Zn ($p < 0,05$) – high in comparison to lymph elements of healthy people. Process of lymph drying leads to an increase in Hg, Zn, Co ($p < 0,001$), Ag, Fe ($p < 0,01$), Cr ($p < 0,05$) and decrease in Br ($p < 0,001$), Sb, Na ($p < 0,05$).

Value of index T_1 in blood and lymph serum of group I equaled $2,52 + 0,034$ c and $1,65 \pm 0,012$ c ($p < 0,001$) correspondingly. In groups I and II average value of index $*T_1$ in blood serum equals $0,059 \pm 0,0060$ c and $0,11 + 0,006$ c, lymph – $0,055 \pm 0,010$ c and $0,19 \pm 0,012$ c ($p < 0,001$). Via mehod of the smallest squares we have defined proportional increase in index $*T_1$ of lymph that depended on degree of tumor progression in TNM system. Results of diagnosing sensitivity and efficiency of the methods according to parameter $*T_1$ equaled 81 and 83 %, while according to parameter $*T_1$ of blood serum they were equal to 60 and 67 % correspondingly. According to contents of Al, Sb, Zn in dry remains of lymph, efficiency of the diagnosing method equaled 93–95 %.

Therefore, lymph is more enriched with water and a number of chemical elements among healthy people that blood serum is. Lymph and blood serum of healthy people contains a linked fraction of water that increases in presence of cancer. Progressive increase in hydration degree, number of lymph and hematogenic tissue allow us to develop a number of prior tests in cancer diagnostics. The received results can be interpreted from the position of multilayer polarized structure at the foundation of hydrating lyotropic lines that represent diameter of the ion itself and diameter of water molecules that are able to rest near them. The most hydrated ions contain more molecules of water and energy around them. Linked fraction of water in extracellular space can be represented as an electrically-charged system of colloid ions of lymph and blood that contains ions of multilayer polarized structure of different hydration degree. In such configurations protons are distributed due to induction that is equaled with dissociation constant. Potential energy increases as electron closes up with core. Graphs of low and high limits of ions' polarization register their significant contribution into the general energy capacity of cells (Ling G., 1962, 2008).

Well-hydrated ions can represent a depot of potential induction energy in a multilayer polarized structure. Average- and low-polarized layers, placed in order of directed hydrated ions ad hydroxide groups, have a significant mobility and activity with a small resource of own internal energy. Generally, linked fraction of water that has certain specific characteristics of emitting interactive fractions of a solved substance, can play as a link of exchange flow between charged particles, ions, water molecules, have an influence upon tissue structures through electromagnetic energy. Volumetric fraction of water, placed under a weak influence of free energy, coming from the whole volume of linked hydrated layer, possesses unstable characteristics of stabilization, presence of high entropy, phase transitions, fluctuations. Self-organization and formation of biophysical processes of multilayer polarized layers has a non-linear nature.

Thus, innovative technologies allow us to estimate linked fraction of water in lymph and blood that can be represented as electrically-charged heterogeneous system that contains multilayer polarized structure of extracellular space. In normal state internal energy of thermodynamic tissue system is concentrated in well-hydrated layers and spread unevenly into average- and low-hydrated layers as free energy along with an increase in entropy in free layers where processes have dynamic and easily-reversed nature. In terms of cancer stable increase in internal energy of polarized hydrated layers will go along with an expressed flow of particles, heterogeneous hydration degree, elevation of certain elements due to redistribution of free ions and water molecules from blood to lymph.

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PATHOGENETIC FACTORS CAUSING FORMATION OF CHRONIC GASTRODUODENITIS IN CHILDREN, CONSUMING DRINKING WATER WITH HIGN CONCENTRATION OF MANGANESE AND HYPERCHLORINATION PRODUCTS

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Introduction. Contamination of drinking water with chemicals of man-made origin generates negative trends in prevalence of digestive system diseases and, above all, chronic inflammatory diseases of the upper gastrointestinal tract [1, 3]. The presence of residual hyperchlorination products and heavy metals in drinking water causes