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СОРОКОВАЯ ГОДОВЩИНА ТЕРМОДИНАМИЧЕСКОЙ ОНКОЛОГИИ

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Abstract. Discovery of natural thermodynamic cause of cancers links neurohormonal époque of medicine with thermodynamic oncology through two publications in 1978 about firstlings neuroendocrinologic and then dissipathogenic cervical carcinogenesis. Human life is distinguished by the verbal ability of assessing the state of personal health and socio-economic environment. An intrinsic quality of human ageing is the growing up loss of strength and well-being, what defined as thermodynamic entropy, e.g. the kind of feeling of increasing ease of fatigue as a person grows older. The well-being of the patient is the highest medical goal and the prohibition of causing harm to humans encompasses not only the medical, but all human conduct due to the natural ageing of human cells. Only after nuclear magnetic resonance imaging technology was introduced it is possible to view a three-dimensional image of a cell's inner state before aggressive and often irreversible changes occur. Self-organization of cellular forms also applies to a person's psychological and social life in the form of newly described informative disease (informatonosis). Many body cells die all the time to ensure that the organism survives. Life of a cell may be saved through self-reorganization of its genome, but it must enhance dissipation of matter and energy in its closest environment. It is the dissipation that causes the signs and symptoms of neoplastic diseases ending with destruction of the body if the treatment comes too late and/or is insufficient, limited only to removal of neoplastic lesions without the always necessary elimination and/or prevention of preneoplastic (dissipathogenic) states.

Keywords: Information rays, Cancer cause, prevention and therapy, Life, Infertility, Informatonosis, Entropy, Biocosmos, Nucleomagnetic resonance and imaging.

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Резюме. Открытие естественной термодинамической причины рака соединяет нейрогормональный период в развитии медицины с термодинамической онкологией, в первую очередь посредством двух публикаций в 1978 году: о первых нейроэндокринологических результатах; и затем о диссипатогенном канцерогенезе шейки матки. Человеческая жизнь отличается способностью оценивать состояние личного здоровья и социально-экономической среды в словесной форме. Внутренним качеством старения человека является растущая утрата силы и благополучия, что определяется как термодинамическая энтропия, и проявляется в ощущении быстрой утомляемости, по мере того как человек становится старше. Благополучие пациента является высшей медицинской целью, а недопущение причинения вреда людям распространяется не только на медицинскую сферу, но и все виды человеческого поведения, тем более что обусловленного естественным старением человеческих клеток. Только после того, как была введена технология создания ядерного магнитного резонанса, стало возможным видеть трехмерное изображение внутреннего состояния клетки до возникновения агрессивных, зачастую необратимых изменений. Самоорганизация клеточных форм соотносится также с формами психологической и социальной жизни человека, и здесь может проявляться в виде недавно описанного информативного заболевания (*информатоза*). Многие клетки тела умирают в запрограммированной форме, но это делается для того, чтобы организм смог выжить в целом. Жизнь клетки может быть спасена путем самореорганизации ее генома, и что реализуется в усилении диссипации вещества и энергии в ближайшей среде. Эта диссипация, которая вызывает признаки и симптомы неопластических заболеваний – завершается разрушением организма, особенно если лечение осуществляется слишком поздно, и/или – если ограничивается только удалением неопластических поражений без (всегда) необходимой элиминации и/или профилактики предраковых (диссипатогенных) состояний.

Ключевые слова: информационные лучи, причина рака, профилактика и терапия, жизнь, бесплодие, информатоз, энтропия, Биокосмос, ядерно-магнитный резонанс и визуализация.

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Выводы

Introduction

Historic discovery of natural cause of cancers links neurohormonal époque of medicine with thermodynamic oncology through two publications in 1978 about firstlings neuroendocrinologic and then dissipatogenic cervical carcinogenesis[4,6,8,15,16,18,20]. The most valuable for human life is medicine, because it is practical art simultaneously studying and helping human health and procreation [en.biocosmology.ru/electronic-journal-biocosmology-neo-aristotelism]. Modern technologies armed physicians with a toolbox for monitoring human health at molecular level, including diagnosis of 284 diseases /www.biobohemia.ru/. Now ultra-high-resolution spectrometry enables measurement concentration of 5000 blood substances from the use of dried blood spot sent by mail to reveal abnormalities on the human metabolic pathways regarding organism state at molecular level, using e.g. flow cytometry of 20 parameters per cell at rate of tens of thousands of cells per second. Nevertheless the metabolomics results to give information required for the medical interpretation of detecting abnormalities. This obliges people to continuously track the progress of both general knowledge and its technological use, including the introduction of purely informational diseases. In this course, for instance, lies, telling untruths, or concealment are treated as an adequate cause of diseases, which destroy motivated human behavior. For example man instead of the exchange of products and services for money (coins) unfortunately began to use only information of their values, but through the life and work of individuals, money indirectly still is associated with substantive information. In social life if one does not know what is going on, it is usually due to money and power as information. Between the sender of information and its recipient as well as the source of information and the place where this information is used, there is a kind of resonance as the essence of animate or inanimate things, only people forgot that in every cause there is precisely this image of the plan, what this cause will precipitate. In relation to man his life is distinguished by the ability of assessing the state of personal health and socio-economic environment, e.g. the kind of feeling of increasing ease of fatigue as a person grows older. An intrinsic quality of human ageing is the growing up loss of strength and well-being, what defined as thermodynamic entropy, which also occurs in other natural phenomena.

1. Medicine – an applied science and art

Despite the passage of 40 years since the discovery of the thermodynamic cause of neoplasms, many doctors still do not apply the new rules in the treatment. Determining the types of medical specializations in the European Union, oncology was rightly not left out of the primary medical fields, apart from widening the field of radiology by including oncological radiotherapy. The well-being of the patient is the highest medical goal and the prohibition of causing harm to humans encompasses not only the medical, but all human conduct due to the natural ageing of human cells. Only after nuclear magnetic resonance imaging technology was introduced it is

possible to view a three-dimensional image of a cell's inner state before aggressive and often irreversible changes occur. Self-organization of cellular forms also applies to a person's psychological and social life in the form of long known neuroses or psychoses and newly described informative disease (informatonosis), illness based on the fact that its source applies to self-awareness in a social environment, from which harmful information originate, e.g. when doctors prematurely perform a cesarean section solely on the basis of the patient's wish contrary to the medical indications. In these cases the doctors interrupt the natural development of the child, even though they simultaneously recognize such action as wrong in their statements. This illness can also be caused by abandoning the hitherto successful methods of monitoring the intra-uterine development of the child. The existence of such an informational illness is shown by the increased risk of a change of the physiological progress of the pregnancy into pathological obstetric incidents. Universe (Biocosmos) is the informational four-dimensional spacetime whose quintessence is information rays and patterns of quantum equivalence of matter, information and energy from emergence to transcendence, and vice versa! Everybody looking at the mirror can see his/her picture which do not have even one atom of only visible person, because it appears as resonance of information pattern (informgraph) of this place (mirror) where the coming from real object (man) information rays meet together with the rays having the identical features (the same amplitude of waves), but coming from eyes directly or by other mirrors. The essence and existence of information rays or patterns can be demonstrated by performing the informational experiment documented the sight's nature. It is sufficient to look at two-dimensional portrait of man (as real object) from three locations: *en face*, and then at the same distance from left and right side doing simultaneously three photographs. On each of them the head of man is seen as “turned” towards the place of observer or photocell. So, one personal real picture exists as three different informgraphs. The observable beings refer to the capability to detect not only light, but first of all the information rays coming from any object, what is called “pattern formation” [8,20,24,26,27,32].

Now information means a basic quantum part of the cosmic informational field for every natural structures or processes. For example many carcinogenic factors were described, including naturally occurring genes, which were even given a name ‘oncogenes’. In 1971 was announced that incidence of cancer would be reduced by half before the end of the 20th century and later would be eliminated, what only increased the fear of the disease. What more, despite the similarities of thermodynamic pathogenesis between cancer and infertility the both diseases were not expected to have the same natural cause, which is why there were attempts to assign an individual source to each of them. Many cells as microsystems die all the time to ensure that the organism is alive despite the impact of ageing processes and pathogenic stimuli, but the end of their individual life may be in exceptional cases prevented by self-organization into a new system. Life of a cell may be saved through self-reorganization of its genome by changing the matter of its own non-functional

organelles into energy and such a new cancer cell may still exist, but it must enhance chaos (dissipation of matter and energy) in its closest environment. This universal phenomenon in nature, discovered by Ilya Prigogine (Nobel Prize 1977) was used by Rudolf Klimek to explain the reason for formation and diversity of neoplasms as a result of statistically conditioned processes [23,25,29,30,31,49].

2. Oncology in Cracow Jagiellonian University

The thermodynamic theory of carcinogenesis was confirmed when Nuclear Magnetic Resonance imaging was introduced in medicine, being an outcome of one-hundred-year-long studies at the Jagiellonian University in Cracow, firstlings presented for the international evaluation of the paper *Etiopathogenesis of tumors and theories of oncogenesis* [18,19,28,38-41,47]. In 1906, professor of the Jagiellonian University Marian Smoluchowski described the foundations of the kinetic theory of matter and stochastic processes known as the Einstein-Smoluchowski's fluctuation-dissipation theorem, thus explaining the role of thermal fluctuations in optimisation of the functioning of living systems and dispersion of light in opalescence [51]. This thermodynamic depiction of events in the morphology-dominated medicine initiated a new direction for function tests, even though at that time R. Virchow's cell theory of the structure of man was not fully accepted. In 1942 B. Skarżyński and the Noble Prize winner (1929, in chemistry) H. von Euler-Cheplin wrote book *Biochemie der Tumoren* (F. Enke Verlag, Stuttgart, translated to Italian in 1945. *La biochemica dei tumori*, Einaudi, Torino), which initiated the biochemistry era in oncology [5,20]. Their statements that a “*cancer cell is a mutated cell and diet creates favourable conditions for development of cancer*” along with the suggestion that lifestyle and nutrition helped fight the neoplastic disease! They connected the aetiology of neoplasms with cell nucleus and decided that the gene responsible for heredity is a nucleoprotein, but at that time its exact structure was unknown.

Between 1953 and 1955, B. Skarżyński generalized his own oncological views in papers “Chemism of carcinogenesis” and “Biochemistry of Neoplasms,” stating that:

All attempts to identify in neoplasms a specific chemical compound, typical only of a neoplastic cell and absent in a normal cell, have failed. The differences between a normal tissue and neoplasm are only quantitative rather than qualitative.... A significant moment in the transformation of a normal tissue into a neoplastic one is such damage to cells that does not make the cell unable to live but that is sufficient to alter its metabolism in a specific way. According to these facts accumulated by biochemistry, carcinogenesis would be a response of a normal tissue to continuously repeated minor damage, to unfavourable environmental conditions created by a carcinogenic factor [45, 50].

These statements could be fully explained only at the level of biophysics, what became evident latter.

Between 1957 and 1967 B. Skarżyński's pupil R. Klimek introduced treatment with natural hypothalamic hormones to medicine, explaining also the neuro-endocrinological causality of cervical cancer; among others he described a different reactivity of blood vessels to those hormones in neoplastic and preneoplastic cervical states and the frequent clinical postpartum hypothalamic insufficiency as a factor predisposing to neoplastic lesions [43,44,46]. Now neurohormonal therapy is a systemic treatment method against neoplasms and preneoplastic states. Thank to that in 1977 he explained the dissipative state of cell [4,6,17,20] defining cancer as:

a natural biological dissipative structure self-organising in the body; if a part of the body (microsystem) is a sufficiently long period in a state far from the biological equilibrium of its environment, and the body as a whole cannot change this state to one that is at least close to the equilibrium, than such a microsystem has an alternative: to die or to choose the lesser of two evils and transform into a new biological structure (a new system), that is a neoplasm. Carcinogenesis is the rarest but the most dangerous consequence of provoked disruptions of the internal state of the system and at the same time a signal warning against the endangered existence of the whole body; prophylaxis of neoplasm ought to involve elimination of all deviations from the equilibrium, especially at the level of the whole body". [Klimek, 1977]

In 1980, R. Klimek together with P. Lauterbur (chemist) and M. H. Mendonca-Dias (physicist) generalized the results of independent studies in a publication about relaxation times of Nuclear Magnetic Resonance in neoplasms within their interpretation as self-organising dissipative structures and their *in vivo* studies interpreted according to the laws of both physics and biology at an atom level in tissues, which can be diagnosed with other methods much later, as preneoplastic states [25, 38-40]. For the first time it became obvious that man is actually built of atoms, even though human senses permit perceiving only colour, sizes, motion, taste, consistency or smell of body parts.

3. Immunoprevention and therapy of carcinogenesis

Similarly to neurohormonal therapy two general directions for immunotherapy of neoplastic diseases arise from the thermodynamic essence of neogenesis: the direct one – targeting neoplasms, and the indirect one – leading to normalisation or sufficient alteration of the environment of the neoplasm. Indirect immunological therapy (immunopotentialisation) from 1985 is aiming to change the biological state of the environment of the neoplasm in which it was formed and which is the only environment in which it can grow and develop [1,21,22,35,42]. Immunopotentialisation therapy of cervical intraepithelial neoplasia involves also the desired cooperation of symbiotic bacteria *Lactobacillus vaginalis*, which to secure

their own existence compete with bacteria and viruses that are pathological for man. By exchanging plasmids with those, they are a natural source of antigens for activation of human immunity system, also for the protein component of viruses. The problem is that in merely ten-plus percent cervical cancer has a direct causal relationship with infections with too many existing virus and bacteria types. The lactobiomic vaccine was introduced to oncological practice by R. Klimek in 1986 at the II International Symposium of Cervical Pathology and Colposcopy, demonstrated that: “usually used in chronic *Trichomonas vaginalis* infections, by causing immunopotentialisation of the system [the vaccine] may become a prophylaxis and treatment method in these lesions” [37]. Histopathological test is still a certain and decisive diagnosis of a self-organising dissipative neoplastic structure at a cell level. A breakthrough in this respect involved introduction of tissue imaging with regard to matter and energy using Nuclear Magnetic Resonance, which made it possible to study the cell metabolism of not only neoplasms, but – what is much more important from medical point of view – also cells in preneoplastic states.

Scientists are under the obligation to communicate the truth about cancer according to the general state of knowledge and not only according to the views of oncologists. Over 80% of malignant neoplasms are formed with participation of carcinogens that pertain to mostly human behaviour: lifestyle, diet and behaviour connected with reproduction. The factors contained in the smoke of burnt tobacco condition malignant neoplasms not only in lungs (80-90% in men) but also in the oral cavity, throat, larynx, oesophagus, pancreas, urinary bladder and kidney, and smoking cessation significantly reduces the risk of carcinogenesis. Diet components may have both harmful and protective effects, similarly to physical exercise. Among occupational factors, the highest risk concerns skin, airways, lungs and urinary bladder, but these factors apply to only ca. 5% of neoplasms in men and 1% in women. Current results of epidemiological and clinical trials – in a huge scope, which covers observations of human behaviour at work, school and during leisure in various periods of human life – were presented in the monograph *Gastrointestinal cancer in Poland* by W. Jędrychowski, for years managing an international team comprised of representatives of various fields of medicine, biology, psychology and sociology [3,6,11,34]. For instance, the frequency of the total impact of viruses, other infections and genetic disorders (15%) which are commonly considered as oncogenic factors is lower than that of such important variables as diet (30-35%) and smoking (30-32%)! Analytical and epidemiological studies on gastrointestinal diseases showed the impact of diet, lifestyle, nicotinism and alcoholism on incidence of stomach cancer against the functioning of a whole family that was influenced by many oncological risk factors. Similarly, the factor that plays the primary role in cervical cancer is improper procreation, as evidenced by the same oncological risk factors that lead to preterm births, and in women with postpartum hypothalamic dysfunction preneoplastic cervical lesions are observed in colposcopy tests in as many as 20% of cases and in cytological tests in at least 10% [12-14,48,53,54].

In 2006 in the book *Cancer-neoplasms and neoplastic diseases*, R. Klimek, J.M. Madej and A. Sieroń directly referred to the general biological scientific achievements and traditions of the Jagiellonian University on the 100th anniversary of the beginnings of modern biochemistry and physics. The text of this book includes edited parts of the R. Klimek's monograph entitled *Cancer-cause, determinants and self-defence*, of 1985, whose content was supplemented with clinical application of imaging and spectroscopy using Nuclear Magnetic Resonance [26]. Finally, in 2011, S Hodorowicz, D. Jasiczek, R. Klimek and R. Tadeusiewicz presented contemporary oncology in a generally accessible book entitled *Cancer and infertility. Truth and myth of medicine* [3]. The purely biophysical cause of cancer cannot disappear as neither can the existence of equally natural phenomena like e.g. lightning. Due to meteorological forecasts, effects of this dangerous phenomenon have been largely reduced through use of constantly improved lightning conductors. When it comes to effective fight with cancer, the hopes focus on detecting and/or delaying the dissipathogenic states, well known as preneoplastic states, and on strengthening the natural protection of a sick body against neoplasms, e.g. via immunopotentialisation with vaccines [36].

Conclusions

Prevention, prophylaxis and proper treatment is of great significance in those who have suffered from statistically increase incidence of certain neoplasms, for instance special care about the health of pregnant women, through proper monitoring of foetus development, determining the time of delivery with an accuracy to days rather than weeks [2,5,10] and treatment of neuroendocrine disorders during pregnancy using ACTH-depot therapy [13,30], as well as limitation of hormonal contraception and in vitro fertilisation [3] Before that, between 1941 and 1945, a Pole B.Skarżyński and a German H. von Euler-Cheplin published book summarising the biochemistry of neoplasms and they were right to indicate e.g. the significance of genes in carcinogenesis, but genes perceived by them according to more modern notions than those currently expressed in biochemistry, where they are reduced just to a sequence of nucleotides [52]. At a level of thermodynamic deliberations peoples are most effectively protected against self-organisation of neoplasms by living according to autoteleological principles, which means that man acts in accordance with their own and socially acceptable ethical and moral values [7-10,53,54].

There are many reasons required for each system to be brought to dissipathogenic states which would inevitably endanger its existence. It is the dissipation that causes the signs and symptoms of neoplastic diseases ending with destruction of the body if the treatment comes too late and/or is insufficient, limited only to removal of neoplastic lesions without the always necessary elimination and/or prevention of preneoplastic (dissipathogenic) states.

Every disease is only one of the many unhappy events in the life of man, who is always influenced by social determinants. K.S.Khroutski makes a critical analysis of

modern theories starting with the theory of Pitirim Sorokin's triadological principle [7,9]. In the Editorial and Discussion Forum with D. Szkutnik, X.Xu and X.Liu, he described Information of the given living thing as "primary basis" – to provide stable equilibrium of all the united polarities – like the Aristotelian substance (*hypokeimenon*), and which is close to the Eastern conception of Nothingness, from which the universe and all beings have come [9]. The Beginning of Universe is hidden for man due to its informational essence, but we have the formulations of the equation $E = mc^2$ in different forms and names, e.g. God, Truth, Tao, Jahwe, Buddha, Entelecheia, etc. In eastern tradition Emptiness or Nothingness are ultimate reality. The matter and spirit are not two independent entities, thereby modern science and philosophy remain and act in the information field together with matter and energy, all in one called the Universe (Biocosmos).

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