

Obstetrical prevention of human cancers

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Abstract

Cancer appears in the new form of cell life as a direct consequence of self-organising pre-cancer cells (dissipathogenic systems), whose further existence is disabled by extreme impairment of their metabolism. Life itself is the highest value, since instead of necrosis or apoptosis, the cellular system in an unfavourable environment can change its genetic identity provided that the improvement in its own metabolism leads to increased chaos by higher dissipation of matter and energy in its environment. Prolongation of human life has resulted by a longer period of old age which is favourable for self-organisation of dissipative neoplastic cells. Modern medicine has explained the relation of the cervical cancer to preterm births and to inadequate use of oral contraceptives and/or replacement, instead of supplementary, neurohormonal therapy. Therefore, as early as in the period of pregnancy reproductive cells should be protected due to their prime importance in the intergenerational passage of life. Disturbance of systemic autoregulation causes development of dissipathogenic state of cells. A single zygote, whose environment is also important for the future development of the next two generations that are initiated with its formation, defines the unique identity of each person, whose life is determined by free will and neoplasms.

INTRODUCTION

The diagnosis of human cancer is always accompanied by the strong feeling of fear, which results from the common image of the disease as being devastating and fatal in character. This is mainly caused by the fact that the society is not adequately informed about reasons and conditions of neoplastic diseases and also by frequent encounters of a devastated human body in the final stage of the disease, which begins by discovering neoplas-

tic (cancer) cells in a patient at any point in life. A multicellular organism, as well as each individual cell, has to exchange matter, energy and information with its closest environment, which is the subject of psycho-neurocybernetics (Klimek *et al.* 2011a; Tadeusiewicz 2009). An intrinsic quality of human ageing is the loss of strength and well-being. Similarly, such useless loss also occurs in other natural phenomena, when it is defined as thermodynamic entropy. The more disorganised the system (e.g. organism, cell, nucleus or just cell

cytoplasm) is, the greater the losses are. The concept of entropy is extremely important for biological systems, since according to laws of thermodynamics, the combined sum of entropy changes of the system and its environment must always be positive. If, for any reason, the cell reduces its own entropy, it must in turn increase entropy in its environment to remain alive, by means of broadly understood dissipation of matter and/or energy. Such excessive dissipation of matter and energy by neoplasms (new systems) in the organism (environment) explains the more and more devastating character of subsequent conditions and disease symptoms. This characteristic feature of cancer appears rapidly in the new form of cell life as a direct consequence of self-organising pre-cancer cells (dissipathogenic systems). A neoplastic cell is formed in replacement of and out of cells, whose further existence is disabled by extreme impairment of their metabolism (Klimek 1980; 1990a; 1990b; 2001).

The best understood human neoplasm is cervical cancer, which is called mothers' disease or the disease of early sexual initiation, which reflects its wide social impact (Klimek 1990a; Klimek *et al.* 2011b). Modern medicine has explained the relation of the neoplasm to preterm births (Klimek *et al.* 1999; 2002) and to inadequate use of oral contraceptives and/or replacement, instead of supplementary, neurohormonal therapy during climacterium (Moreno *et al.* 2002; Smith *et al.* 2003; Cogliano *et al.* 2005; Vesey & Painter 2006).

The life of every human being begins at the moment of union of two live reproductive cells, which separately are deprived of the most important feature of cellular life forms, i.e. the ability to divide into daughter cells (clones). Only thus formed hybrid cell (zygote) is able to divide into three kinds of cells (I–III), whose further division leads to development of mature human beings (I somatic cells), in whom individual reproductive cells (II) will develop, as well as temporary cell structures (III) just for the period of pregnancy (placenta, foetal membranes) necessary for the proper development during this most important stage of life (Klimek *et al.* 2011b, Klimek 2007; Cosmi *et al.* 1997). Each of the three cell types is subject to thermodynamical laws, as all biological systems. Physiologically, the life of an individual cell ends with its division into two cells of the same genetic type or as a result of dematerialisation during apoptosis, i.e. programmed transformation of its matter into energy needed for formation of multicellular structures, e.g. embryo or placenta. This phenomenon is already observed in embryo cells (blastocytes) before implantation in the uterus, which is a beneficial environment of the female reproductive organ. The cell may also undergo rapid physical destruction (necrosis) due to lack of necessary substances, especially oxygen. Life itself is the highest value, since instead of necrosis or apoptosis, the cellular system in an unfavourable environment can, and sometimes even must, change its genetic identity (genome controlling metabolism), pro-

vided that the improvement in its own metabolism leads to increased chaos by higher dissipation of matter and energy in its environment (Klimek 2001; 1990b). This new form (neoplasm) gains new and also unique genetic identity, since such a cell may form a new clone only in a similarly unique organism, in which it had developed. It should be emphasised that only several dozen percent of pregnancies end with birth of a mature neonate, which in turn becomes the environment for a clone of its own reproductive cells assuring passage of life across generations. This is how intergenerational social life is combined with its individual life, which plays a more and more important role in the fight against neoplasms and diseases caused by them (Klimek 2007; Cosmi *et al.* 1997; Fedor-Freybergh 1998; Klimek *et al.* 2001). All these factors altogether give pregnancy and protection of a pregnant women priority among activities assuring longevity of the Homo sapiens species.

EMBRYO AS THE PATIENT

Current medicine is proud of elevating the foetus to the sphere of its direct interests, since the foetal condition of a child has a direct influence on the life of its reproductive cells. Ovaries of mature female foetuses contain several million such cells, out of which a mature woman uses about 400 during ovulation in order to be able to give birth to several children at the most. Nature that does not like to produce anything in excess produces several million egg cells required for selection of only one cell suitable for ovulation in menstrual cycles. It remains unclear why no new egg cells develop in ovaries after birth. Similarly, out of millions of spermatozoa developed in testes underneath the scrotal skin and then ejaculated, usually only one forms a zygote. This huge pool of cells assuring fertilization in the mother's body (*in vivo*) is in direct contrast to artificial formation of zygotes (*in vitro*) following hormonal stimulation of female ovulation and the selection of foetus(es) for further intrauterine development. Only on this level, may one consider possible harmfulness of hormonal interference, which is unfortunately too often related to biochemical routes only. The production of hormones depends also on the activity of its component enzymes, mainly on the clinical condition of endocrine glands, where biophysical processes are of great importance, since they are related both to atomic level of metabolism and purely physical blood flow and concentration of its components. At the same time, one may observe underestimation of the dominance of neurohormonal hypothalamus-pituitary-adrenal axis over an analogical axis ended with gonads, which are related to adrenal glands by metabolism of steroid hormones. Excessive use of steroid hormones not only inhibits gonadal steroidogenesis, but also blocks hypothalamic stimulation of endocrine glands, i.e. gonads and adrenal glands. For instance, the use of contraceptive pills for several months excludes a cyclic activity of gonads, whose role

is to prepare a potential mother not only to get pregnant but also to a proper development of pregnancy and foetus. At the same time, in case of recurrent miscarriages, necessary adrenal stimulation is rarely used. However, the treatment of habitual abortions with long-acting adrenocorticotropin (ACTH-depot) gives much better results than steroid hormones, especially their synthetic analogues (Klimek *et al.* 2011b; Klimek 2010; Klimek *et al.* 1996). Unfortunately, parts of the foetus that remain in the uterus after incomplete abortion are often diagnosed as endometrial polyps, and ovary cysts are not associated with pregnancy-induced increased activity of ovaries that are too long kept on low activity, which leads to unsatisfactory increase of ovary hormone production before their synthesis in the placenta. The above facts may easily be connected with the huge impact of psycho-emotional attitudes of both physicians and patients, e.g. those treating mild acne symptoms with contraceptive pills, advertised as a new recommendation to improve facial beauty.

As foetal cells are genetically heterologous to the mother, they are tolerated thanks to physical, biochemical, hormonal and immunological tolerance, whose potential lack contributes to the spontaneous initiation of child delivery. This is confirmed by the fact, that the increase in the concentration of enzymes (aminopeptidases), disintegrating elevated production of peptide hormones in hypothalamus during pregnancy in mother's blood, is stopped only before the delivery and by the rapid decrease of stimulated by these hormones adrenocorticotropin concentration during physiological delivery (Klimek *et al.* 2011a; Klimek *et al.* 1996; Klimek *et al.* 2006). Before such true tolerance disappears, a caesarean section performed on request a week or more before the delivery term often results in transfer of pregnancy cells (foetal or afterbirth) outside the reproductive organ (not only to the postoperative skin wound). Subsequent divisions of the cells lead to development of clones with their own vascularization, which is recognised as a prolonged disease with periodic pain called endometriosis (from endometrium). These cells, as any other cells of embryo, foetus, neonate and parents are subject to psychoneurocybernetic laws with the second law of thermodynamics being dominant and extended with dissipative structures (Klimek *et al.* 2011b).

After the period of neonatal, foetal and embryonal psycho-perinatology, medicine has reached the level of an individual human cell. Therefore, it must now directly deal with the condition of ovaries and testes, since they are the place of formation and development of reproductive cells, which are not incidentally placed in the human organism due to the potential influence of the human environment (eukumene). Here we come to the difference with ecology, which is, or at least should be, governed by man following truth, goodness and beauty (Klimek *et al.* 2010; Klimek *et al.* 1996; Klimek *et al.* 2006).

PSYCHOCYBERNETIC MEDICINE

Thanks to free will, man can act harmfully even towards himself, since he is himself responsible for negative consequences of his actions. However, he must take ethical and legal responsibility for consequences of his opinions and information directed towards other people, especially those lying in the scope of his social responsibility. For example, a gynaecologist who surgically removes uterus due to myomas causing abundant menstrual bleeding, too often deprives a woman of both ovaries for the fear of development of ovarian carcinoma. In about 600 000 operations of uterus removal that are performed annually in the USA, half of them involve preventive removal of both ovaries, which has a long-term negative influence on the cardiovascular and nervous systems in women, who lack endogenous oestrogens. Each year, ovarian carcinoma results in about 15 000 deaths, but coronary heart disease results in as many as 320 000 deaths a year, while 100–200 thousand women develop dementia following removal of both ovaries (Whiteman *et al.* 2008; Parker *et al.* 2009; Bennett 2007). A study conducted in Denmark revealed that the risk of ischaemic heart disease is 7 times higher in women who had their both ovaries removed before reaching 40 years of age than in women after 45. The risk of cardiac disease was higher with earlier ovary removal, due to a decrease in blood hormone levels (Lokkegaard *et al.* 2006). None of the conducted studies revealed prolonged survival, and the disorders resulting from the Parkinson's disease, anxiety states or depression and osteoporosis were greater in women who underwent ovariectomy at a younger age.

Unfortunately, the increasing incidence of neoplastic diseases is related to natural phenomena, which cannot be fully eliminated. Prolongation of human life achieved by medicine has resulted by a longer period of old age which is favourable for self-organisation of dissipative neoplastic cells. Therefore, as early as in the period of pregnancy reproductive cells should be protected by taking care of gonads, due to their prime importance in the intergenerational passage of life. So far, man has not interfered so often in reproduction on a cell level. Disturbance of systemic psychoimmunoneuroendocrinological autoregulation causes development of dissipathogenic state of cells. A single zygote, whose environment is also important for the future development of the next two generations that are initiated with its formation, defines the unique identity of each person, whose life is determined by free will and neoplasms.

Histopathologists long ago defined morphological criteria of differentiating between pre-neoplastic states and neoplasms, and their dissipathogenic and dissipative character respectively was confirmed by the first atomic imaging performed ever by means of nuclear magnetic resonance on the example of cervical cancer (Klimek 1990a, Klimek *et al.* 2011b). A clear bound-

ary between neoplastic cells and the surrounding cells of the multicellular system confirms the phenomenon of self-organisation of neoplasms caused by numerous factors. The closest environment of each human cell is constituted by tissues forming a biological entity, which is subject to numerous forces from the purely physical type (radiation, gravitation, temperature) to psycho-emotional and social factors. Therefore, there are no two identical neoplasms that would develop in time or space in one human organ.

Pathological states of cells may regress following neurohormonal normalization and/or immunopotentialisation of their environment, which in the event of necessary surgical removal of the neoplasms significantly improves the results of oncological treatment, especially in early stages of the disease (Klimek 1990a,b; Cosmi *et al.* 1997; Fedor-Freybergh 1988). For example, potential and necessary conditions for development of cervical cancer fall within a wide range of factors, from genetic hereditary states to psycho-emotional procreative and sexual reactions. It should be also emphasised that the same factors are in a causal link with the occurrence of pre-term births (Klimek *et al.* 2002; 2006; Klimek 2010). About 20% of women with post-pregnancy neurohormonal insufficiency (hypothalamosis) has clinically recognised pre-cancer states of cervix, due to e.g. the history of obstetrical haemorrhages, abortions and pre-term births (Klimek 1980; 1990a,b; 2001, Klimek *et al.* 2001).

HPV, contraceptive pills or other numerous bacteria and viruses cannot be treated as the only factors sufficient for neogenesis. Their total elimination, even as necessary factors, may only lower incidence of cancers, since a much greater pathological influence is exerted by factors lowering the repairing and protective mechanisms of the whole system, e.g. drugs, stimulants, or even low economical and social status or improper diet, or even only by using the image of cancer in advertisements to frighten people buying alcohol or cigarettes. Procreation disorders lead mainly to neoplasms of reproductive organs, and improper diet and elimination of metabolism product favours neoplasms of the alimentary tract. Definitely, cervical cancer is not an infectious disease, but it must be remembered that infection, inflammation and infectious diseases weaken the biochemical, neurohormonal and immunological regulation of the system, which makes it difficult to eliminated dissipathogenic states in every cell of the system. Therefore, it is important not to neglect treatment of even the least advanced pre-cancer states, such as cervical intraepithelial neoplasia (CIN1) only because 50% of them disappear, since the other half leads to development of a neoplastic disease (Klimek *et al.* 2011b).

Neoplasm prolongs life of the new biological form of cells, but also shortens the life of the affected human, in whose organism it develops causing pain and symptoms of a neoplastic disease. Understanding self-organisation

of dissipative structures as a phenomenon primarily described in physics, chemistry and sociology is also a necessity in modern oncology. Introduction of spectroscopy and imaging with nuclear magnetic resonance (NMR), helped to confirm in 1980 the thermodynamic theory of neogenesis by allowing recognition and differentiation between cancer and pre-cancer states on the basis of cervical and vulvar cancer (Klimek *et al.* 2006; Klimek *et al.* 1981; Mann *et al.* 1984).

The most important thing, however, is to introduce to oncology very useful concepts of medical thermodynamics by informative recognition of matter and energy identity, i.e. simultaneity of morphological and energetic changes concerning cellular form of life, leaving subcellular details to theoreticians, since they are not directly available for a physician in his practice. The most dangerous and common, but at the same time the easiest to eliminate factors leading to cervical cancer are the constantly increasing cases of abnormal course of pregnancy and birth due to iatrogenic and medial causes, as well as long-term and inadequate use of contraceptive pills (Klimek *et al.* 1996; 2006). Elimination of viral and bacterial infections also belongs to useful preventive activities, since according to medical thermodynamics, each infection may extremely depart cell metabolism from the physiological internal states. Killing bacilli and preventing infection may symptomatically restrict or eliminate numerous infectious diseases, but to fight neoplasms as natural phenomena one must employ a completely new strategy, which may be compared to the strategy used in lightning rods or stations of early detection of potentially dangerous natural forces. However, methods and measures used to achieve this goal must be implemented and advertised according to the current state of knowledge about them. Lactovaginal immunopotentialisation supplements conservative and surgical methods of oncological treatment and may be used as prevention in women with the history of abortions, pre-term births, no or reduced lactation, neurohormonal menstruation disorders, chronic and recurrent inflammatory states of the reproductive organs, long-term hormonal contraception and replacement therapy during climacterium, or just lack of *Lactobacillus vaginalis*, as signs of cervical cancer risk.

Neoplastic diseases are not infectious, like for example flu, which may develop in spite of previous vaccinations against several types of influenza virus. It is possible to experimentally integrate viruses into genome of animal cell, but the nucleotide sequences that are later isolated are not infectious (Klimek *et al.* 2011b; Klimek 2007). In contrast to neoplastic diseases, in infectious diseases it is possible to isolate a cause of the disease from the affected organism, e.g. a virus or bacteria and use it to infect other people. On the other hand, numerous attempts to cause neoplasm in healthy subjects by implanting neoplastic cells in their organisms have not been successful. Therefore, informing

a woman about vaccination against cervical cancer, which is actually vaccination against only a few types of human papilloma virus, is unnecessary disinformation. Common definition of vaccines as e.g. preventing influenza, or any other infectious disease, may be justified only by the fact that this type of disease cannot appear without at least one type of influenza virus, which is sufficient to cause influenza. Unfortunately, it undergoes constant mutations. Excluding infection, there are many other and much more common factors, e.g. in relation to cervical cancer even 120 (Klimek 2010; Hodorowicz *et al.* 2011; Jasiczek & Klimek 2011; Klimek & Klimek 1990; Klimek *et al.* 1989).

The most efficient neoplasm prevention is proper upbringing and education of every person to live and work according to an autoteleological principle of compatibility between deeds and socially acceptable values. Teleology involves aiming at goals in the very cause of each event. For example, viruses infect cervical epithelial cells to assure their own survival and reproduction, not for the purpose of neoplastic transformation, which is deadly for both the cells and viruses themselves. For this purpose, viruses use a natural phenomenon of epithelial cell exfoliation, by which means multiplied cells spread in the human environment. In certain circumstances, however, the infected cell does not have to die or get exfoliated, i.e. when it forms endosymbiosis with the virus by implementing the virus into its own genome. Through self-organisation, which is only possible by increased dissipation of matter and energy in the closest biological environment, genetic identity of the previous life form of such a cell is changed and the replication of the virus is stopped. This way, the causal aim of viral infection itself, i.e. viral reproduction, disappears! Instead, cervical cancer cells start to clone and they are responsible for development of symptoms of a disease called cervical cancer. This disease, in turn eliminates from the human population such individuals, whose defence and repair mechanisms have not been able to fight the viral or bacterial infection. Thus, in general biological terms, cancer turns out to regulate the *Homo sapiens* species as well, and at the same time, it acts as a barrier for viral replication, including human papilloma virus. Unfortunately, even if the HPV infection is cured or it regresses spontaneously in the majority of cases, there is no permanent immunity against the infectious disease, which may recur and the same time result in neogenesis, despite the fact that man developed effective protection against such infection. Spontaneous regression of the diseases in 80% means that only higher efficacy of the vaccine determines its real effect.

The cause of neoplastic diseases (cancer) is a natural and common phenomenon of self-organisation of systems endangered with death into more efficient dissipative spatio-temporal structures, at the expense of their environment. In relation to humans it means that carcinogenesis cannot be eliminated, but it is possible to

effectively prevent development of neoplastic diseases, which are more often curable thanks to primary and secondary prevention.

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