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науково-практичної інтернет-конференції
з міжнародною участю

СУЧАСНІ ПРОБЛЕМИ ВИВЧЕННЯ МЕДИКО-ЕКОЛОГІЧНИХ АСПЕКТІВ ЗДОРОВ'Я ЛЮДИНИ

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Moroccan government has made a concerted effort to improve health infrastructure and expand health service coverage across the country [3].

Environmental and nutritional factors can have a noticeable effect on the morbidity of the population. Environmental problems in Morocco include urban air pollution, especially in cities such as Casablanca and Marrakech, which can lead to respiratory illnesses. Exposure to hazardous substances, especially in industrial areas, can pose health risks. When it comes to nutrition, Morocco faces a dual challenge: combating malnutrition, especially among children, and rising obesity rates due to changing dietary habits and increased consumption of processed foods and sugary drinks. Taking these factors into account is crucial to improving public health in Morocco.

Thus, Morocco is witnessing a major shift in its epidemiologic profile with an increasing burden of non-communicable diseases, which currently account for approximately 75% of all deaths in Morocco (cancer, metabolic diseases, including diabetes and cardiovascular disease account for 40% of the main causes of death). The estimated prevalence of raised blood pressure is relatively high at 32.4%, other risk factors include obesity and raised fasting blood glucose at 16.4% and 9.9%, respectively. The rest part of deaths on 18% are attributable to communicable diseases, maternal, perinatal and nutritional conditions.

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NANOLEVEL BIOLOGY: THE ROLE OF BIOPHOTONS IN PHYSIOLOGICAL AND METABOLIC PROCESSES IN THE HUMAN BODY

Understanding the essence of the processes of quantum interaction between cells at the nanolevel of cellular organization in a healthy and sick body will improve the understanding of the pathogenesis of diseases and will allow us to find new methods

for their treatment and prevention. Therefore, the study of the fundamental aspects of cellular communication is a pressing issue for science to understand the phenomenon of biological life [1]. The fundamental particle of the electromagnetic field and its quantum is the photon. The concept of “biophoton” was introduced after the discovery and recognition of the fact that the cells of all living organisms and humans constantly emit photons. This phenomenon is called "ultraweak photon emission" (UPE). The discovery and study of UPE has become a new era in fundamental science and has given medicine a new potential for its further development. [1, 2]. Therefore, the aim of the theoretical study was to generalize the available scientific physical and biological knowledge of modern science about the role of biophotons in the electromagnetic processes of the phenomenon of life at the cellular level in order to deepen the fundamental knowledge of Complex Medicine. An explanation of methodology. The analysis of the presented data is a fragment of research work of the Department of Internal Medicine and Emergency Medicine of Poltava State Medical University on "Development of algorithms and technologies for implementing a healthy lifestyle in patients with Noncommunicable diseases based on the study of functional status" (state registration number 0121U108237: UDC 613 616-056-06: 616.1/9-03). Scientific work is carried out in conjunction with the following scientific institutions: 1) Lithuanian University of Health Sciences; 2) Shupyk National Healthcare University of Ukraine. General scientific methods (dismemberment and integration of elements of the studied system, imaginary experiment, logical, historical research, analysis, induction, deduction, and synthesis of knowledge) and theoretical methods (method of constructing theory, logical methods, and rules of normative nature) were used in this theoretical study. Results and Conclusions. 1) Cells generate biological electromagnetic fields in the ultraviolet and visible range of the spectrum, as well as in the frequency range below the terahertz range. If the frequency of the oscillatory charge is high and approaches the optical part of the spectrum of the electromagnetic field, then the electromagnetic waves generated by cells [or cell organelles] begin to show their corpuscular properties when interacting with matter - then we can talk about particles of light or biophotons, which are a scientifically established physical substrate of cellular electromagnetic signaling. 2) Emission of biophotons or UPE is a universal optical phenomenon for most living biological systems, including humans, consisting of electromagnetic radiation in the spectral region from 200 to 800 nm, with a constant rate from several photons per cell per day to several hundred photons per organism per day. UPE accompanies the process of life, is of key importance for the life of cells, correlates with indicators of metabolism, hormonal levels and chronobiological rhythms of living organisms. UPE is the result of the spatio-temporal manifestation of the energy of the biological electromagnetic field of a living cell, the coherent properties of which are electromagnetic intercellular signaling. 3) In situ, at least 75%

of biophoton activity comes from DNA. In the nucleus is a spiral-shaped genetic material that functions like a biological laser, receiving energy in the cell from nutrients in the form of photons. Photons stored in DNA in the form of a Bose-Einstein condensate constitute the elementary stability of the DNA molecule, establish an electromagnetic coherent cellular biological state in which photons of the same frequency and phase are aligned with each other. This allows us to assert that those 98% of DNA that were considered "junk" are responsible for the implementation of complex electromagnetic processes inside the cell through the biophoton mechanism. 4) Normally, human cells are characterized by the ability to accumulate the ultra weak light energy transmitted to them [biophotons] and use it for biochemical processes. The ability to accumulate photon energy decreases under pathological conditions and aging, which is objectively manifested by a change in the processes of emission of biophotons during registration. 5) Biophoton emission or UPE provides resonant signaling between cells, processes of cellular regeneration, cellular activity, cellular metabolism, viability and replication. 6) The emission of biophotons or UPE [cell signaling and cellular biochemical processes, respectively] strongly correlates with the cell cycle and other functional states of cells and organisms, and manifests itself as a response to many external stress stimuli, depends on the influence of external natural electromagnetic fields (chronobiological rhythms, geomagnetic influences, influences of near space). 7) The emission of biophotons or UPE can play an important potential role in specialized cells of the nervous system in the transmission and processing of nerve signals, being one of the mechanisms of the higher functions of the nervous system of complex living biological organisms, including humans, and presumably can make it possible to create internal biophysical pictures during visual perception and imagination in a humans. 8) The emission of biophotons or UPEs are involved in tissue morphogenesis, providing a superposition of various cells inside the organ, since they form an information field that is transmitted through the connective tissue according to the fiber optic principle. 9) The emission of biophotons or UPE is a manifestation of the final link of metabolism and is an energy and information carrier that is transmitted through the connective tissue of the whole organism according to the fiber optic principle.

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INNOVATIVE ISSUES OF IMPROVING THE QUALITY OF THE EDUCATIONAL PROCESS

In today's conditions of an ever-increasing flow of information, which previously a person received throughout his life, modernization of the educational space is needed, based on innovative strategies using the latest achievements of science and practice.

It is not so much necessary to transfer to students the amount of this or that knowledge, but to teach them to acquire this knowledge independently, to be able to navigate in the information space, to use the acquired knowledge, which in general contributes to the development of critical thinking and the formation of professional competences, which will be used in the future in the conditions of continuous self-education [1, 2].

The center of training of future doctors is traditionally the patient, the practical work of students at the patient's bedside. Recently, these clinical meetings have become more difficult due to the increase in the number of students, the decrease in the availability of patients for students in specialized departments of hospitals, and the pressure of ethical restrictions.

At the department of internal medicine No. 3 with phthisiology of the Poltava State Medical University, a new course "Propaedeutics of internal diseases" was introduced, created on the basis of the educational platform Moodle - a course management system (electronic learning), also known as a learning management system or a virtual learning environment. And if the platform itself is universal, then the saturation with high-quality and creative content, the modern structuring of the discipline (educational component) is the result of fruitful creative activity of the department's employees. The ability to perform effective independent work by students, an interactive lecture course, conducting full-fledged versions of practical classes, an auxiliary role in conducting practical classes, modular controls - this is how the teachers of the department see the prospects of using the course. The experience of learning at the third level of education was used, mistakes and shortcomings were taken into account, and the advantages of this form were used even more. However, it is simply impossible to evaluate the work of the platform and the educational content