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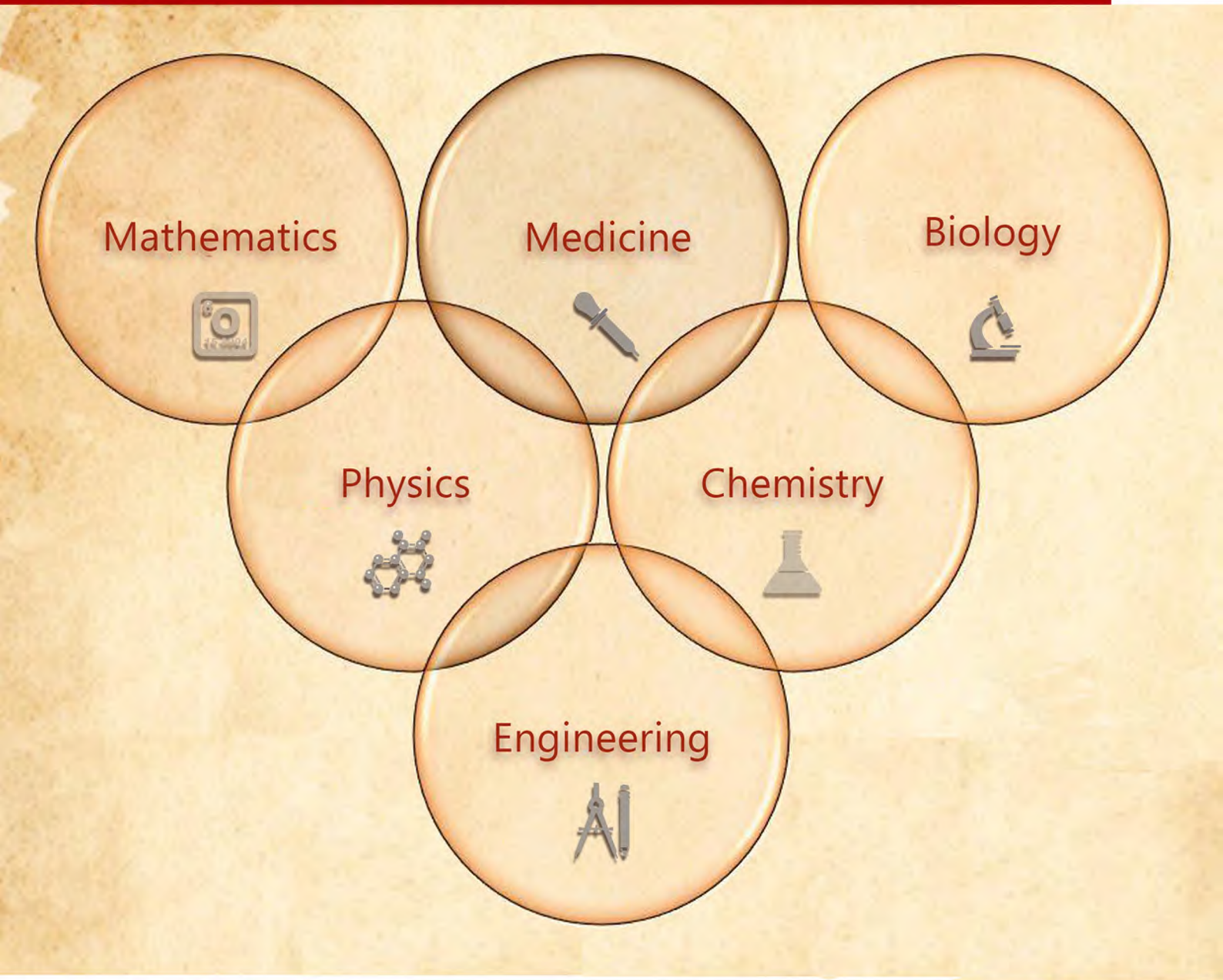

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NATIONAL MEDICAL RESEARCH CENTRE FOR ONCOLOGY

DEPARTMENT OF ONCOLOGY, ROSTOV STATE MEDICAL UNIVERSITY

THE ALL-RUSSIAN SCIENTIFIC AND PRACTICAL CONFERENCE WITH INTERNATIONAL PARTICIPATION "FUNDAMENTAL RESEARCH: STOPPER OR DRIVER IN MODERN ONCOLOGY?"

Rostov-on-Don, Russia, October, 20-21, 2022

Conference Proceedings

The Conference is dedicated to the 45th anniversary of the scientific discovery "Pattern of Development of Qualitatively Differing General Unspecific Adaptation Reactions of the Organism" made by Garkavi L.Kh., Ukolova E. B. and Kvakina E.B. and 115th anniversary of the birth of Professor Ukolova M.A., the founder of the experimental department at the National Medical Research Center for Oncology at the Ministry of Health of Russia.

Venue: Federal State Budgetary Institution "National Medical Research Center for Oncology of the Russian Ministry of Health"

Program Committee:

Kit Oleg Ivanovich (Head) - General Director of the National Medical Research Center for Oncology, Ministry of Health of Russia, Doctor of Medical Sciences, Professor, Academician of the Russian Academy of Sciences (Rostov-on-Don)

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Section: TRANSLATIONAL MEDICINE

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XENON-OXYGEN THERAPY AS A FACTOR OF NORMALIZATION OF ADAPTIVE AND PSYCHO-EMOTIONAL STATUS IN PATIENTS DIAGNOSED WITH CERVICAL CANCER AT THE SURGICAL STAGE OF ANTITUMOR TREATMENT

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Introduction. Radical surgical treatment of cervical cancer (CC) involves the removal of the uterus with suspected metastatic foci in the regional lymphatic collectors and the ovaries. In this case, total ovarian suppression in patients of reproductive age is accompanied by polysystemic functional disorders in the form of postovariectomy syndrome (POES), which is manifested by changes in homeostasis, neuroendocrine and cardiovascular insufficiency, pronounced disorders in the psycho-emotional sphere with the formation of a persistent stress situation and the development of psychological dysfunction [1]. Most of the methods of rehabilitation therapy are limited in their use and do not always lead to a satisfactory result that promotes searching for new technologies in the rehabilitation of cancer patients at all stages of antitumor treatment. In order to achieve a balanced response by the organism of a cancer patient to stressful events of the disease progression and the

impact of aggressive treatment methods, the basic principles of activation therapy are actively implemented by the National Medical Research Centre for Oncology. So, guided by the pattern of changes in the dose-time parameters of activation therapy [2], in order to provide regression of the functional disorders in patients with cervical cancer, an exponential algorithm of xenon-oxygen therapy (XOT) was developed. Having nootropic, anti-inflammatory, analgesic and immunostimulating properties, xenon is effectively used in the correction of acute and chronic stress [3].

The aim of our study was to assess the dynamics of the adaptive and psycho-emotional status in patients with cervical cancer of reproductive age with clinical manifestations of POES under the influence of exponential xenon-oxygen therapy at the surgical stage of antitumor treatment.

Patients and methods. 26 patients of reproductive age, diagnosed with cervical cancer, who underwent radical surgery (extirpation of the uterus with appendages) and had clinical signs of POES, received restorative therapy as follows: 5 inhalation procedures with a xenon-oxygen mixture in an exponential dose regime with an increase in xenon dosing from 15% to 25% in the mixture and with a reciprocal decrease in the exposure interval from 25 to 10 minutes. 24 patients with similar initial data received standard postoperative treatment without XOT. The psychoemotional status was assessed according to the results of the generally accepted standardized questionnaire for the quality of life for cancer patients, namely, The Edmonton Symptom Assessment System (ESAS). The type of their adaptive response to treatment (according to L.Kh. Garkavi) was assessed using the analysis of the Schilling's leukogram and the calculated coefficient of the ratio of the total cluster of stress and antistress reactions (K = AS/S) (before surgery, on the 1st and 10th days of the postoperative period).

Results. According to our study, on postsurgery day 1, 72.8% of the patients with cervical cancer had acute stress, which was 2.3 times higher than that recorded for the initial state; the antistress / stress ratio was 0.37, which was 5.4 times less than the level recorded before treatment. On postsurgery day 10, in the group without XOT, the acute stress reaction prevailed in 67.2% of the cases; no dynamics of the antistress/stress ratio was observed. The use of XOT in the patients with cervical cancer led to diametrically opposite results, the incidence rate of the responses of the antistress type was 78.6%, the ratio of antistress/stress exceeded the value recorded on postsurgery day 1 by 6.6 times and reached the initial values, whereas balanced training reactions dominated. The positive dynamics of the adaptive status in the CC patients with the use of XOT corresponded to the subjective data obtained with the ESAS questionnaire. According to the results obtained, in the group of patients receiving the restorative therapy with a xenon-oxygen mixture, a clear regression of their vegetative and psycho-emotional disorders was observed, where a statistically

significant decrease in the manifestations of nausea by 3.9 times, depression by 2.7 times and anxiety by 2.1 times was recorded ($p<0.05$).

Conclusion. The use of exponential XOT, in the shortest possible time, provided a productive reformatting of the adaptive status in the cervical cancer patients with a predominance of a cluster of anti-stress types of reactions and normalization of the psycho-emotional state in response to radical surgical treatment.

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ACCOMPANYING TRANSCRANIAL MAGNETOTHERAPY IN COMBINATION TREATMENT OF HIGH-GRADE GLIAL BRAIN TUMORS

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Introduction. Low survival and poor quality of life in patients with high-grade brain gliomas (HGG) dictate the need to develop and promote new approaches, including accompanying transcranial magnetic therapy (TMT) with pulse-type magnetic field (PT MF) and ultra-low-frequency magnetic fields (ULF MF), characterized by their non-invasiveness and safety in applied procedures. The key point of these original wave technologies is the construction of algorithms of the actions based on the principles of activation therapy, which was developed as a result of the discovery “Pattern of development of qualitatively differing general nonspecific adaptational reactions of the organism” (Scientific Discovery Registration Certificate No. 158 issued by the Committee on Inventions and Discoveries at the Council of Ministers of the USSR, 1975) [1]. It is important that the developed programmed modes of TMT, inducing the development of general nonspecific adaptional reactions (GNAR) of a physiological type, allow co-adjusting various body systems, including the cardiac performance, and indirectly exercise a regulatory effect on some cardiovascular disorders that occur in cancer patients [2]. As a rule, surgical treatment of HGG is associated with a significant functional load on the heart, causing persistent cardiotoxicity and myocardial metabolic disorders.