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**В.В. Погорелов. Эндотелий-нейрососудистые параллели в центральном звене патогенеза компрессии эпидурально-сосудистой системы и коррекция поясничной боли. – Статья.**

**Аннотация.** У 68 больных с поясничной болью было выявлено повышение титра NR2-антител к NMDA-рецепторам и экспрессия sVCAM-1 и sICAM-1, а также снижение этих показателей под влиянием прегабалина.

**Ключевые слова:** антитела к нейрорецепторам, молекулы адгезии, прегабалин.

**V. Pogorelov. Endothelium-neurovascular parallels at the central link in pathogenesis of compression of epidural-vascular system and correction of low back pain. – Article.**

**Summary.** At 68 patients suffered from low back pain were discovered increase of titers NR2-antibodies to NMDA-receptors and expressions VCAM-1 us ICAM-1 and decrease these indicators under influens of pregabalin.

**Key words:** antibodies to neuroreceptors, molecules of adhesion, pregabalin.

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## **COMPARATIVE CHARACTERISTIC OF ONCOLOGICAL REHABILITATION CENTERS ABROAD AND IN UKRAINE**

**Summary.** The article presents cancer rehabilitation centers in Ukraine and abroad. There were considered the methods of physical rehabilitation in oncological clinics. A comparative price's characteristic has been made. It has been studied the range of services provided by clinics for the examination and treatment of patients.

**Key words:** oncological clinics, rehabilitation, treatment.

Over the past 100 years, the incidence and mortality rate in the world, oncopathology has moved from the tenth place to the second, yielding only to the cardiovascular system diseases. In 2016, 8.9 million people are estimated to have died from various cancer forms. According to the World Health Organization, every year 10 million people damage by this illness. According to WHO, cancer mortality will increase by 45%, till 2030 as compared to the data of 2007. Unfortunately, Ukraine ranks the second place of cancer deaths in Europe. This determines the relevance of this topic and the need for in-depth study [2].

Cancer and its treatments can sometimes have lasting effects on daily performance including physical, cognitive, emotional and social functioning. Cancer rehabilitation has been defined in the scientific literature as a distinct field of medicine that focuses on reducing or eliminating side-effects of cancer treatment and improving survivors' strength, ability to function and quality of life. This field is a subspecialty of Physical Medicine and Rehabilitation (PM&R), also known as physiatry and/or rehabilitation medicine [7]. Oncology rehabilitation often involves a team of health care specialists working together with the patient to develop a personalized rehabilitation goal and plan. Led by a cancer rehabilitation physician, physical therapists, occupational therapists, speech and language pathologists, and other oncology-trained support care staff work together with a targeted purpose – to help patients maintain or return to functional well-being. Oncology rehabilitation includes a wide range of therapies designed to help patients build strength and endurance, regain independence, reduce stress and maintain the energy to participate in daily activities that are important for individuals.

Oncology rehabilitation is a type of therapy that helps individuals to improve physical function during and after cancer treatment. Cancer prehabilitation refers to the assessments and interventions that are conducted just after diagnosis but before cancer treatment begins. A panel of experts has highlighted the importance of establishing rehabilitation services prior to the oncological treatment to optimize tolerance to surgery or adjuvant treatments, minimize toxicity and improve outcomes. Recent clinical studies have shown that cancer prehabilitation and rehabilitation can increase function and may improve outcomes and disability rates [7]. Therapists receive specific training to address the unique needs of individuals undergoing or recovering from cancer surgery, radiation, and chemotherapy. Surgical cancer treatment can lead to tissue tightness and scarring, decreased motion range, swelling and pain. Physical therapy uses manual techniques and gentle exercises to improve tissue quality, endurance, movement, circulation, and pain reduction. The process of rehabilitation is the physiological and psychological restoration of the patient's condition, the returning of the lost organism functions, the improving of the patient's life quality to the maximum possible level [6].

Khripunkova noted that only 35% of patients received comprehensive instructions for further rehabilitation, 40% – insufficient information, and 25% – no information on this issue. Patients are unaware of the need for rehabilitation, or simply do not know where to go.

There are several different methods of treating cancer. Apart from cancer surgery, radiotherapy and the use of cytotoxic drugs in chemotherapy, treatments include the newer targeted drug delivery [13]. Living with cancer, cancer treatment and recovering from the disease are very heavy experiences in many respects. This is why cancer patients need to undergo rehabilitation. The need for rehabilitation varies greatly with different types of cancer and among different patient groups.

There are four types of cancer rehabilitation:

- 1) **Preventive type of rehabilitation** – is aimed at preventing disability.
- 2) **Strengthening (restorative) type of rehabilitation** – aimed at returning patients to the former way of life.
- 3) **A supportive type of rehabilitation** is aimed at teaching the patient in order to allow him to adapt to the disability that has occurred and to minimize the complications of continuing illness.
- 4) **Palliative type of rehabilitation** – aimed at eliminating complications, providing comfort and support.

We want to introduce and to compare some oncological rehabilitation clinics from different countries, which are situated nearby Ukraine.

1) **Max Grundig Clinic in Germany**, Baden-Baden. It's located at a height of 800 meters above sea level. Clinic located in the Black Forest. The three main areas of the Max Grundig Clinic are: Prevention (Check-up); Primary therapeutic care; Rehabilitation treatment. Max Grundig Clinic is designed for 95 beds with accommodation in single and double wards, as well as in ward-suites, and double wards are provided only in case of a patient with an accompanying person. There is a department of physical rehabilitation that conducts physiotherapy, yoga and aquafit. Patients should always consult their physician about the activity amount they are suitable for. Their cancer rehab centers helps and explains that physical exercises can reduce the side effects of cancer therapy and chronic fatigue syndrome, and exercises have a beneficial effect on the mental health of cancer patients. The rehabilitation program may include the following therapies: physiotherapy, psychotherapy,

sports therapy, occupational therapy, relaxation therapy, psycho-oncology, art therapy, psychological seminars, health seminars, nutrition tips or wounds [10, 11].

2) One more rehab clinic that attracts our attention is **Clinic Bud Trissl**. It is located in the middle of Upper **Bavaria in Alps**. Each rehabilitation department counts approximately near 60 beds. There is a Gym equipped with 15 simulators such as: fitness apparatus, treadmill, elliptical trainer, simulators for strength training where patients occupy to improve their physical and psychological health. This clinic specialized in following: Physiotherapy (General Therapeutic Gymnastics, Gymnastics by Bobat, Respiratory therapy, Sling table, Manual therapy, Therapeutic gymnastics on simulators, Hydrotherapy); Sports therapy (Cardiovascular Training, Nordic Walking, Rhythm and dance, Morning gymnastics, Pilates, Kegel exercises, Gymnastics hands and shoulder joint, Gymnastics for the spine etc. Ergotherapy is carried out in order to restore all body functions in everyday life; a special place is occupied by the upper limbs restoration. It includes functional motility training or sensitivity training after patients often feel limited in their limbs due to chemotherapy. Such training can be individual or group [9].

3) The next one clinic is: **Latvian Virotherapy Center, in Jurmala**. This center is specialized in the following: Lung cancer, Melanoma, Sarcoma, Stomach cancer, Bladder cancer, Kidney cancer, Pancreatic cancer, Uterine cancer.

The Doctors of this center create individual rehab programs for each patient. There is a well-equipped gym for patients, and a large terrace for yoga or relax. It is possible to ride bike, walk around the sea and in the park. Ozonotherapy and art therapy are used for rehabilitation too. The treatment, a rehab and a room is included into the price.

In Ukraine, there are well-developed specialized private oncology clinics nowadays which offer services of the prevention, diagnostics, treatment, rehabilitation, supervision, maintenance and support the patient with using international standards of evidence-based medicine. Clinics are equipped with the latest equipment, they use the latest advances in molecular biology and nuclear medicine, which allows to introduce advanced treatment and diagnosis technology, also set clinic's in line with the leading cancer center in the world. The clinics apply the latest methods of medication, chemotherapy and radiation therapy [12].

**UBI Medical Center, Ukraine** (2011). Unfortunately, there is little-known rehabilitation center in Ukraine. It is situated in Vasylkiv, near Kyiv. It is a premium class international clinic, which provides a patient's complex rehabilitation throughout its whole life. Unlike clinics mentioned before, they have only 2 types of program, depending on stay time. There are programs for 7 and 13 days. The price depends on the program type and the amount of days. The average price of 7 days course is 43 thousand UAH, and for 13 days is 74 thousand. Clinic specialized for cancer patient's rehabilitation: 1) between chemotherapy and radiotherapy sessions; 2) after a full course of radiotherapy and chemotherapy; 3) after cancer operations; 4) before carrying out complex antitumor therapy (preparation) with postoperative limbs lymphostasis. The work of the center is divided into such blocks as: complex health assessment, programs for business and active person, annual support programs, therapy and rehabilitation programs and other methods.

The therapy and rehabilitation block includes: cardio-rehabilitation, cancer rehabilitation, degenerative-dystrophic and rheumatic diseases, therapy of various chronic diseases. During rehabilitation of cancer patients use some tinctures, ozone therapy needle, hypoxia-therapy, pressure therapy, thalassotherapy, reflex therapy with osteopathic massage.

Thalassotherapy quickly cleanses the body of oxidized metabolism products, eliminates lymphatic edema, combat varicose veins.

Ozone therapy is a modern method of therapy using medical ozone (ozone-oxygen mixture). It's therapeutic effect is achieved due to the strong oxidizing properties of ozone to boost immunity. Infusion of ozonized saline allows to stop inflammation quickly and to relieve intoxication and recommended to weakened patients after severe operations and diseases and reduce the side effects risk. Ozonopuncture allows individuals to eliminate. Lymphostatic swelling of varying limitation degrees; Postoperative scars and stretch marks.

In Ukraine, a number of foundations have been created to help cancer patients and also conduct rehabilitation. For example, the frame work pilot rehabilitation program from "Inna Foundation", there was organized a systematic improvement of oncological illnesses in one of Kyiv sanatorium. For patients cancer rehabilitation, the Brovary deputies city council highlighted 42 thousand UAH in 2016. Patients attended classes on physical education, gym, saltroom, swimming in the pool, receiving phyto- and aromatherapy, relaxing in the relaxation room. However, there are offices or departments of physical rehabilitation in hospitals and sanatoriums. For example, Mirgorod sanatorium "Khorol" in Chernihiv region, "Osterech" Menasanatorium.

**Conclusions:** Unfortunately, oncology is wide spread illness in the world and there is an increasing morbidity statistics. Most of people don't know what to do even after they have successfully completed the treatment. In Ukraine, it is conducted only in general-purpose rehabilitation centers, but not in special oncological ones. More rehabilitation methods are available in foreign clinics, but these clinics are very expensive. In the constitution of Ukraine, medical care is represented by the following types of: emergency, primary, secondary (specialized), tertiary (highly specialized), and palliative. The rehabilitation of oncologic patients has not yet been reflected in the principles of legislation. Thus, an analysis of the situation with regard to the organization rehabilitation in Ukraine of cancer patients is depicting a picture of underestimation by organs and the Ministry of Health institutions to introduce the physical, mental restoration status and integration into their public lives. At the same time, the regulatory legal framework for rehabilitation has been developed in the system of disabled, but, unfortunately, there is no staffing for providing services to cancer patients[1]. For the creation of a rehabilitation system for cancer patients in Ukraine requires three components of the organization construction: practical cooperation between the Ministry of Health and SMEs; organization of cancer patients rehabilitation specialists training and staffing of oncology and rehabilitation institutions; carrying out scientific and methodological researches of rehabilitation processes mechanism to restore the cancer patients health. So, such situation requires improvement of the rehabilitation system in Ukraine.

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**І.М. Стифанишин, Н.А. Юрко, С. Яковенко. Порівняльна характеристика онкологічних реабілітаційних центрів за кордоном та в Україні. – Стаття.**

**Анотація.** У статті представлено онкологічні реабілітаційні центри в Україні та за кордоном. Розглянуто методи фізичної реабілітації в онкоклініках. Здійснено цінову порівняльну характеристику. А також вивчено спектр наданих клініками послуг щодо обстеження та лікування пацієнтів.

**Ключові слова:** онкологічні клініки, реабілітація, лікування.

**И.М. Стифанишин, Н.А. Юрко, С. Яковенко. Сравнительная характеристика онкологических реабилитационных центров за рубежом и в Украине. – Статья.**

**Аннотация.** В статье представлены онкологические реабилитационные центры в Украине и за рубежом. Рассмотрены методы физической реабилитации в онкоклиниках. Осуществлена ценовая сравнительная характеристика. А также изучен спектр предоставляемых клиниками услуг по обследованию и лечению пациентов.

**Ключевые слова:** онкологические клиники, реабилитация, лечение.