RELEVANCE OF THE DIAGNOSTICS OF ONCOGENIC DISEASES

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Introduction. Cancer is a concept that refers to a large group of diseases that nowadays can affect any part of the body or organ. Also use other names for this disease: malignant tumors and tumors.

Aim. The aim of the work was to analyze the modern scientific literature in the field of carcinogenesis and identify problems of oncotherapy.

Materials and methods. Analysis of scientific literature and results of advanced research in the field of microbiology, virology, pathology and immunology.

Results and discussion. Analyzing the data of the existing literature, it was found that by 2020, cancer problems are a very big problem for all mankind. In 2020 alone, the disease reached 19.3 million people worldwide, 10 of whom died from this terrible disease. Compared to 2007, the number of diseases increased by 33% and rose from the sixth place of the most common diseases to the second. Cancer is the cause of almost every sixth death in the world. The most common cancer groups in the world are non-melanoma skin cancer; cancer of the trachea, bronchi and lungs; breast cancer; colon and rectal cancer and prostate cancer. In the first place is breast cancer.

In 2020, breast cancer accounted for one in eight new cancers in the world and one in four among women: 2.3 million people were diagnosed with the disease and 685,000 died from it.

Among other cancers, most often die due to:

• lung cancer (1.76 million deaths);
• cancer of the colon and rectum (862,000 cases);
• gastric cancer (783,000 deaths);
• liver cancer (782,000 deaths).

According to scientists, by 2040 the number of annual new cases of cancer will increase by 47 percent and reach 28.4 million.

Such a high incidence is associated with nutrition. The ranking is headed by sugar substitutes, artificial colors and flavors that are part of the products. They are able to trigger malignant growth due to their excessive toxicity.

Many manufacturers, forgetting about human health safety, abuse the addition of various food additives that extend the shelf life of the product, making it more beautiful and appetizing. These include primarily E additives (the most dangerous are E102, E123, E127, E284, E 285, E512, E574, E999, E1200). They have a very strong carcinogenic effect, which can provoke cancer of the gastrointestinal tract and skin.

Other, no less dangerous, are nitrites and nitrosamines, which are added to sausages and other smoked products. Also, you should add not only additives, but also ways of cooking. Cancer is caused by so-called ultra-processed foods – snacks, sodas, bakery products, cornflakes with sugar, semi-finished products and reconstituted meat products.

According to experts, increasing the consumption of ultra-processed foods by 10% increases the risk of cancer by 12%, and in the case of breast cancer – by 11%. No less important factor in the occurrence of cancer is tobacco use. Tobacco smoking alone accounts for almost 22% of the world's cancer deaths. It is also important to note such an important issue as low and average incomes. About 70% of cancer deaths occur in low- and middle-income countries. Up to 25% of cancer cases in low- and middle-income countries are caused by cancer-causing infections such as hepatitis and human papillomavirus.

A common problem is seeking medical care in the later stages of the disease and the unavailability of diagnosis. more effective treatments in the period from 2000 to 2015 helped reduce the likelihood of premature death by 20%; at the same time, in low-income countries, this figure decreased by only 5%.

According to the virogenetic theory of carcinogenesis, the mechanism of tumor transformation is explained by the fact that the genome of the virus is introduced into the genome of the cell, integrated into the DNA molecule, "rewrites" its information. After that, the cell begins to reproduce daughter cells, but no longer with its genetic code, but with the code of the virus. After that, active cell proliferation begins, due to the fact that the virus creates the necessary nutrient medium for its existence, and therefore provides numerous cell proliferation. Oncologists now use targeted therapy in immunooncology, a subset of which is cell therapy. The picture of cancer therapy has changed: cancer treatment has shifted from largely nonspecific cytotoxic procedures to complex treatment options targeting separate signaling or mutation pathways with a single driver, contributing to precision treatments and their use in specific, well-defined molecular systems.

By 2020, there are already several treatments for this disease. But, despite this, the problem of this disease is still there, because there is still no effective remedy. If the cancer is detected at an early stage, the prognosis is most favorable, in most such cases, patients are completely cured. In the later stages and in the advanced stages of the disease, antitumor therapy is ineffective. Symptomatic treatment is used in parallel to alleviate the symptoms of the underlying condition and the effects of chemotherapy or radiation.

There are several basic treatments. These are surgery, chemotherapy, radiation therapy, photodynamic therapy, hormone therapy, immunotherapy, cryotherapy and palliative therapy. In this case, the most effective method today, oncologists consider

mixed therapy: for example, surgery plus chemotherapy or surgery with radiation therapy.

Conclusions. Cancer is a very big problem nowadays, but it should be said that over the last 50 years, great progress has been made in the field of research on cancer prevention and treatment. Oncologists are testing cancer drugs that will help overcome it in the future. But despite this, the problem of low and high incomes remains. Access to innovative and often prohibitively expensive cancer drugs, even for high-income countries, is a widely discussed and relevant topic. The financial burden that currently accompanies many new cancer agents, a problem that is also relevant to high-income countries, has prompted the European Society of Medical Oncology and the American Society of Clinical Oncology to develop measures to curb the cost of various pharmaceutical products.

AGE CHANGES OF THE MICROBIOM IN THE HUMAN BODY

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Introduction. In recent years, evidence of the potential effect of the microbiome on the functioning of the human body. The human microbiome is considered as a separate organ that is actively involved in various physiological processes, including a major role in age-related changes in the human body. Age-related changes in the microbiome can adversely affect health because they lead to dysfunction of microbial communities and failure of the metabolic chain.

Aim. The aim of the study was to analyze modern literature sources with research on age-related changes in the microbiome in the human body.

Materials and methods. Analysis of scientific articles by researched topic.

Results and discussion. Numerous scientific studies have been conducted on the relationship between microbiota and age. In old age, the relationship between the human body and its associated microbial communities undergoes complex changes that can lead to a variety of consequences for humans, including dysbiosis, infections, somatic diseases and general deterioration of functional status.

In old age (after 50-60 years) in the intestinal microbiome there is a decrease in the diversity of the microbiota. Such changes are accompanied by a decrease in the number of beneficial symbionts (bifidobacteria, bacteroides, lactobacilli) and a numerical increase in potentially harmful microbes (microorganisms of the genus