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MODERN PROBLEMS OF ONCOLOGY, IMMUNOTHERAPY

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Abstract:
Oncological diseases require expensive diagnostic procedures, their therapy captures a lot of time and effort, in addition, patients, as well as the principle , have a need for hospitalization. Among the inhabitants of Western countries, lung, skin, gastrointestinal tract cancer, as well as prostate cancer, have become the most widespread.The possibility of cancer of various etiologies during its own existence is shown in the figure. Almost all the years, the main methods of treating cancer were microsurgery, as well as therapy. Recognition of the original source is of great importance, so this is often considered a key diagnostic aspect of the direction of the disease. In this case, after all, the period of local metastases significantly complicate the difficult procedure, and also, being not noticed in a timely manner, have every chance of being a factor in the lethal outcome. propensity as well as proof of the ability to form a malignant neoplasm together with the greatest possibility.

Keywords: Oncology, immunotherapy, antitumor research.

Background:
Historically, parenteral nutrition has been the first line of nutritional support for cancer patients, especially after surgery and long-term chemotherapy. Today, enteral nutrition in the vast majority of cases is the preferred method of correcting nutritional status. The use of enteral nutrition prevents atrophy of the gastrointestinal mucosa, while improving protein kinetics. It was also Enteral nutrition has been shown to reduce the risk of complications and toxicity of chemotherapy. In turn, parenteral nutrition was associated with an increased complication rate and a longer time to resume a normal diet compared to enteral2**.** As follows from the latest scientific data summarized by the authors, a malignant tumor is a disease based on damage to the genetic material of the cell,

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which leads to its uncontrolled reproduction, metastasis and loss of the ability to programmable cell death. At the same time, vascular formation (angiogenesis) is the most important component of tumor growth and metastasis. The tumor for its growth requires constant formation of blood vessels, which provides sufficient nutrition and removal waste products. Oncotolerance of immunity and angiogenesis are two interrelated programs that ensure the stable development of the disease. Until recently, there were three classic weapons in the fight against cancer - surgery, radiation therapy and chemotherapy. Even though these treatments are definitely effective, the latter two are often very toxic to the body and have serious side effects with devastating consequences for the patient. In particular, chemotherapy drugs affect not only the tumor, but also other organs and systems. In addition, well helping one patient, they are completely unsuitable for another.In this regard, there has long been a question of the need to create drugs, the effectiveness of which could be predicted on the basis of studying the characteristics of the disease of each patient. Such requirements are met by a new direction in the treatment of tumors - the use of targeted (molecularly directed) therapy. The use of innovative targeted drugs has such an effective effect on malignancy that the patient can live with cancer for many years, while having a good quality of life. Among the measures in complex antitumor therapy, the authors consider the use of drugs of natural origin with minimal side effects, in particular, based on macromycetes, which have recently attracted increasing interest from researchers. For this purpose, the literature sources concerning the significance and prospects of the use of biologically active substances (BAS) of macromycetes in oncology have been analyzed and summarized. Information on the antitumor activity of various biologically active substances (polysaccharides, proteins, low molecular weight compounds) and extracts from higher fungi is given. The authors point out that the positive results of studies of the antitumor effect of fungal drugs both in the direction of the search for new types of fungi and in the direction of the isolation of biologically active substances are undoubtedly important for the modern pharmaceutical industry. However, as rightly noted in the conclusion of the chapter, most studies are completed at the stage of preclinical trials and require continuation - expensive and lengthy clinical trials. Therefore, a comprehensive study and better understanding of the mechanisms of biological action of biologically active substances of fungi, the development of inexpensive technologies for obtaining mushroom mass and/or extracting individual biologically active substances with antitumor action8 will accelerate

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the industrial production of drugs for oncological practice. As already mentioned, anticancer drugs, in addition to targeted therapeutic action, have a variety of side effects. One of them is the nephrotoxic effect.

Materials and methods:

The material of the study was the literature data presented in scientific articles, textbooks, journals.

Results

Of the study: Immunotherapy methods in the treatment of malignant tumors can be divided into three classes: active, adoptive and passive immunotherapy. Active IT is aimed at triggering an immune response in the body of the tumor carrier. Non-specific active immunotherapy is based on the use of cytokines and bacterial adjuvants. Specific - on the use of antigens of tumor cells (antitumor vaccines). OLA can be used as vaccines; dendritic cells loaded with ODAs, tumor cells themselves and their hybrids with DC, as well as isolated DNA.

Adoptive immunotherapy is aimed at enhancing the effector link of the antitumor response through the introduction of cytotoxic cells - lymphokine-activated killer cells (LAC) as a variant of nonspecific therapy and antigen-specific CTL as a variant of specific therapy. Passive IT is based on the use of antibodies conjugated with cytotoxic agents, which can be used as various toxins, gamma isotopes or cytostatics.

Non-specific immunotherapy. Cytokines are the most widely used as active non-specific immunotherapy. Their action is due to various mechanisms, including:

direct cytotoxic and cytostatic effects on tumor cells (tumor necrosis factor- (TNF-), interferon- (IFN-)), malnutrition and vascularization of the tumor (TNF-, IFN-); activation of APC functions (granulocyte-macrophage colony-stimulating factor (GM-CSF), interleukin-4 (IL-4), IFN-, TNF-, Flt-3 ligand);

- increasing the immunogenicity of tumor cells (IFN-, interleukin-1 (IL-1), GM-CSF);

- activation of cytotoxic cells (interleukin-2 (IL-2), interleukin-1 (IL-I), TNF-, GM-CSF).

Efficacy of non-specific IT in the treatment of malignant tumors (objective response in the form of complete and partial tumor regression, %)

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Diagnosis	IL – 2	NFI	THE -2 NFI	VARNISH
Melanoma	24	18	18 – 41	21
Kidney cancer	22	12 – 16	28	25
Stomach cancer	0	-		-
Colorectal cancer	0	-		16
Liver cancer	0	-		-
Pancreatic cancer	-	-		-
Lung cancer	0	-		0
Breast cancer	0	0	16	0
Sarcoma	0	-		0
Hemoblastosis		16 – 40		-

Conclusion

The gradual accumulation of experimental data, the development of immunology proves the theory of "immune surveillance", and also explains the failure of immunological protection in the formation of a tumor and opens up huge opportunities for medicine.

Currently, immunotherapy is in its infancy: there are many failures and failures, there are several successful and even sensational examples, but most of the technologies are still at the levels of preclinical and clinical trials.

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