

The Role of Medicine in the Treatment of Cancer

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Abstract: Cancer remains one of the leading causes of morbidity and mortality worldwide, presenting a significant challenge to public health. The treatment of cancer requires a multidisciplinary approach, with medicine playing a crucial role. This article provides a comprehensive overview of the role of medicine in the treatment of cancer, focusing on the various modalities and advancements in medical interventions. It discusses the use of chemotherapy, targeted therapy, immunotherapy, and hormone therapy, highlighting their mechanisms of action and clinical applications. Additionally, the article explores the role of supportive care in managing cancer-related symptoms and improving patients' quality of life. Overall, this article emphasizes the importance of integrating medicine into the holistic care of cancer patients to achieve optimal outcomes.

Keywords: cancer treatment, chemotherapy, radiation therapy, surgery, immunotherapy, targeted therapy, hormone therapy, palliative care, clinical trials.

Introduction

Cancer, characterized by uncontrolled cell growth and proliferation, represents a complex and challenging disease that affects millions of individuals worldwide. Despite significant advancements in cancer research and treatment, it remains a leading cause of death globally, posing a substantial burden on healthcare systems and society as a whole. The management of cancer requires a multidisciplinary approach, with medicine playing a pivotal role in its treatment.

Chemotherapy:

Chemotherapy, a cornerstone in the treatment of cancer, refers to the use of cytotoxic drugs to kill cancer cells or inhibit their growth. It is often used as a primary treatment modality for various types of cancer, including leukemia, lymphoma, and solid tumors. Chemotherapy works by targeting rapidly dividing cells, which are characteristic of cancer cells. While effective, chemotherapy is associated with side effects such as nausea, vomiting, hair loss, and fatigue. However, advancements in chemotherapy regimens and supportive care have significantly improved its tolerability and efficacy, leading to better outcomes for cancer patients.

Targeted Therapy:

Targeted therapy represents a more personalized approach to cancer treatment, focusing on specific molecular targets involved in cancer growth and progression. Unlike chemotherapy, which affects both cancerous and healthy cells, targeted therapy aims to selectively target cancer cells, minimizing damage to normal tissues. This targeted approach has been particularly

successful in treating certain types of cancer, such as breast cancer and lung cancer, leading to improved survival rates and quality of life for patients.

Immunotherapy:

Immunotherapy harnesses the power of the immune system to recognize and destroy cancer cells. It works by stimulating the immune system or by introducing synthetic components to enhance its activity against cancer cells. Immunotherapy has revolutionized the treatment of certain cancers, such as melanoma and lung cancer, providing durable responses in some patients. However, not all patients respond to immunotherapy, highlighting the need for further research to identify biomarkers that predict response to treatment.

Hormone Therapy:

Hormone therapy is used to treat hormone-sensitive cancers, such as breast and prostate cancer, which rely on hormones for their growth. Hormone therapy works by either blocking the production of hormones or interfering with their action, thereby inhibiting cancer growth. Hormone therapy is often used in combination with other treatment modalities, such as surgery or radiation therapy, to improve outcomes in hormone-sensitive cancers.

Supportive Care:

In addition to the specific treatments mentioned above, supportive care plays a crucial role in the overall management of cancer patients. Supportive care focuses on managing symptoms, improving quality of life, and providing psychological support to patients and their families. It includes pain management, nutritional support, psychosocial counseling, and palliative care for patients with advanced disease. The integration of supportive care into cancer treatment plans has been shown to improve patient outcomes and satisfaction with care.

WHAT IS CANCER? DISEASE INFORMATION

Cancer (cancer) is a malignant tumor (tumor) that grows from the internal tissues of the body. The reason for this name of the disease is that in 90% of cases, the tumors of poor quality in patients resemble crab (cancer) claws (Russian: рак). In developed countries, 15-20% of all deaths are caused by cancer.

CAUSES OF CANCER

So far, no one has proven exactly what causes cancer. Currently, there are several dozen scientific points of view. If all of them are combined into one general picture, three main factors contributing to the development of poor-quality tumors are distinguished:

- Physical factors — they are radiation, ultraviolet rays;
- Chemical factors — carcinogens;
- Biological factors — some dangerous viruses.

All of them initially lead to the pathology of the DNA structure, as a result of which the oncogene is activated and the cells achieve eternal life. As a result of this, the cells begin to multiply and form a tumor without dying.

These factors are external causes of cancer development. However, in addition to external factors, there are also internal causes - this is a genetic predisposition. In this case, the ability of the organism to restore DNA or the level of immunity to oncology is reduced. Often, the internal and external causes of cancer are so blurred that it is difficult to talk about the superiority of their influence.

The mutational theory of cancer is generally accepted in the scientific world. According to this theory, a cancer cell is the result of specific genetic defects of immature cells of the body under the influence of external or internal factors. Other theories of carcinogenesis are also discussed.

However, none of them reflect the essence of the disease, because:

- Modern principles of cancer treatment - based on elimination of the consequences of the advanced disease: suppressing the growth of tumor cells through surgical intervention, chemotherapy and radiotherapy methods;
- No principles exist to understand the mechanisms by which cell mutation is controlled.

After the discovery of the universal mechanism of carcinogenesis, the way to exclude the development of bad-quality tumors, which means a real victory over the disease, will undoubtedly be determined.

Therefore, it is not practical to dwell in depth on the definition of various theories in this article. We will dwell on the simple and understandable moments recognized by all scientists, unquestioned and of practical use to students.

Common symptoms of cancer

Low hemoglobin

Hemoglobin is a protein in the blood that carries oxygen to the organs. A sharp decrease in hemoglobin level can be a sign of oncology. If you've had a blood test for some reason, your doctor may not care much about your hemoglobin level for that reason, so be on the lookout for yourself. If you see that hemoglobin is 70-80 units, contact an oncologist.

Pain

Every pain has a reason. For example, back pain often occurs due to unusual movements or improper physical exertion. Suppose a person visiting a fitness club decided to save money and train independently rather than hiring a trainer, but did not follow his posture during the exercises. If the pain appears for no reason, does not go away for a long time, and does not improve with painkillers, it is better to go to the doctor.

Sudden weight loss

This symptom often appears in the later stages of the disease, but it is possible to appear earlier. If you have suddenly started losing weight, but you are not in stressful situations, you have not gone on a diet and you do not do sports, this is a reason to contact an oncologist. The patient stops eating well and loses weight rapidly due to dehydration. Because the tumor forces the body to work differently, which disrupts the metabolism and leads to sudden weight loss? A sudden weight loss is not a reason to rejoice, it is a symptom.

Fatigue

In the initial stages, the patient quickly gets tired after daily work, which he easily coped with before. The reason for this is that the tumor poisons the body and changes normal processes. Ask yourself, are there other causes of fatigue?

You get sick often

When cancer appears, the patient's immune system weakens, it can no longer fight viruses and infections. If you start getting sick more often, especially in the hot season, get checked out, not because of the air conditioning. This symptom manifests itself in the early stages of cancer, but it is difficult to recognize.

Jaundice

In case of poisoning with toxins or any serious disease, the liver stops performing its functions completely, and the tumor process is involved. This causes the skin to change color and become yellow. Sometimes, if there is a disease, the skin darkens, hair starts to grow quickly.

CANCER TREATMENT PROSPECTS

Oncology is a high-tech branch of medicine. The higher the logistics of the stages of medical organization from diagnosis to rehabilitation, the higher the patient's chances of recovery. There are also countries that provide high-level medical care for cancer patients (Germany, Switzerland, Israel, the United States of America).

In recent years, Russia has taken certain positive steps by creating high-tech centers. Great opportunities have been created in Uzbekistan. Currently, a cure for cancer is being studied.

If it is diagnosed at an early or late stage, in addition to the above, the prospects for recovery in the early stages are much higher.

The great Hakim Abu Ali Ibn Sina in his work "The Laws of Medicine" describes medicinal plants used in the treatment of many diseases, including cancer.

There are inscriptions about it. In our article, we provide information about some medicinal plants that are used to reduce the risk of developing cancer.

No product can protect against cancer 100 percent, but some of them significantly reduce the risk of developing the disease, and some, on the contrary, increase the likelihood of the disease. Oncologists have compiled a list of the most useful products, as well as the most dangerous. Therefore, oncologists recommend consuming these products as often as possible, so that the risk of the onset of the disease is reduced as much as possible.

Garlic

Doctors recommend adding garlic to your favorite dishes and eating it as often as possible, because the sulfur compounds in it can stimulate the immune system's natural defenses. Research shows that regular consumption of garlic reduces the risk of stomach cancer by 12%.

Broccoli

Broccoli is another superfood that can prevent the risk of developing cancer. But doctors warn: under no circumstances should it be cooked in a microwave oven, because it destroys 97% of plant flavonoids that protect the body.

Walnut

A valuable source of selenium, an element that destroys cancer cells and significantly reduces the risk of developing colon cancer and prostate cancer. A study by Cornell and the University of Arizona found that just two whole walnuts a day reduced the risk of prostate cancer by 63 percent, colon cancer by 58 percent, and other forms by 46 percent.

Citrus fruits Regular consumption of lemons, oranges and grapefruits significantly reduces the risk of developing stomach and oral cavity cancer. In addition, citrus fruits help reduce the risk of esophageal cancer.

Currant

This is a very useful berry - because it has many antioxidants that can eliminate the effects of free radicals that can damage healthy cells and cause dangerous diseases, including cancer. Research shows that currants retain their beneficial properties not only fresh, but also dried, frozen and jam.

Salmon

In general, any oily fish is extremely healthy: just four servings a week can reduce the risk of developing leukemia, myeloma and lymphoma by a third. In addition, regular consumption of fatty fish prevents the development of uterine cancer.

Kiwi

Kiwi is rich in vitamins C and E, as well as lutein, copper and antioxidants that neutralize free radicals and protect health.

Tea

Just two cups of tea a day can reduce the risk of developing ovarian cancer by 32 percent. According to researchers, it all has to do with flavonoids, antioxidant compounds found in tea leaves.

Apple

First, the dietary fiber that apples are rich in reduces the risk of colon cancer. Second, a special type of antioxidant, procyanidins, can kill cancer cells. In fact, the more often you eat apples, the less likely you are to go to the doctor.

But oncologists advise to avoid the following products or at least eat them as little as possible:

Conclusion: Oncology is a high-tech branch of medicine. The higher the logistics of the stages of medical organization from diagnosis to rehabilitation, the higher the patient's chances of recovery. Huge opportunities for high-level medical care for cancer patients have also been created in Uzbekistan. Currently, a cure for cancer is being studied.

Conclusion: Oncological diseases are currently the leading group of human pathologies. In the practice of world medicine, success has been achieved in the treatment of the initial stages of the disease. Limiting factors are the complexity of organizing regular large-scale diagnostic examinations in the preclinical stage of cancer, the high rate of pathogenesis of some forms. In this regard, education is important to improve oncology awareness among the population.

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