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Editorial

What Will Oncology Be Like in The Next Five Years?

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Introduction

Oncology is a constantly evolving field, and in the next five years it is expected to continue advancing in multiple areas. Here are some trends and developments that could shape oncology in the coming years:

A) Greater personalization of the treatments:

Precision medicine refers to the selection of specific treatments based on the genetic, molecular and immunological profile of each patient. This allows the treatments to be more effective and with fewer side effects. In the coming years, precision medicine is expected to expand further, including the use of new genomic sequencing technologies, big data analysis and CAR-T cell therapies and gene therapies [1].

B) Therapies based on immunotherapy:

Immunotherapy has become an important treatment option in cancer, especially for advanced cancers. It is expected that in the coming years, advances in immunotherapy will allow the application of new techniques, such as adoptive cell therapy and combined immunotherapy. Adoptive cell therapy involves the use of genetically modified immune cells to attack cancer, while combined immunotherapy refers to the use of two or more immunotherapy treatments to improve efficacy [2].

C) Greater use of artificial intelligence:

Artificial intelligence (AI) is increasingly being used in oncology to analyse large amounts of data and help doctors make informed decisions about treatment. Advances in AI include the identification of patterns in medical images, the selection of personalized treatments and the development of predictive models to assist in clinical decision-making.

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D) Advances in early detection:

Early detection of cancer is crucial for successful treatment. In the coming years, technological advances are expected to allow the use of more accurate biomarkers for the early detection of cancer, as well as the use of new imaging technologies, such as positron emission tomography (PET) and magnetic resonance imaging (MRI), for the early detection of certain types of cancer.

In general, oncology over the next five years will focus on the personalization of treatments, immunotherapy, artificial intelligence and early detection of cancer. With advances in these areas, cancer patients are expected to receive more effective treatments with fewer side effects, which can lead to better long-term results and a general improvement in oncological care [3].

What about hemato-oncology?

Hemato-oncology is a specialized branch of oncology that focuses on the treatment of blood cancers, such as leukemia, lymphoma and myeloma.

In the next five years, hemato-oncology is also expected to experience significant advances.

Here are some trends and developments that could shape hemato-oncology in the coming years:

A) Cellular and gene therapy:

Cellular and gene therapies, such as CAR-T therapies and gene therapy, have been shown to be highly effective in the treatment of certain types of blood cancers. It is expected that in the coming years, these therapies will become a more common treatment option and will be available to an increasing number of patients [4].

B) Greater personalization of treatments:

As in general oncology, precision medicine is also expanding in hemato-oncology. Advances in genomic sequencing, proteomics and metabolomics are expected to allow a better understanding of the mechanisms of the disease and, therefore, a more effective personalization of treatments.

C) Advances in immunotherapy:

Immunotherapy is also gaining ground in hemato-oncology. It is expected that in the coming years, advances in immunotherapy will allow the application of new techniques, such as combined immunotherapy and NK cell immunotherapy, for the treatment of blood cancers.

D) Greater use of artificial intelligence:

As in general oncology, artificial intelligence is expected to become an increasingly important tool in hemato-oncology. AI is expected to be used for the identification of new therapeutic objectives, the selection of personalized treatments and the interpretation of genomic and proteomic data.

Is the Bone Marrow Transplant Past?

Bone marrow transplantation is still considered an important treatment option in hemato-oncology and other medical conditions. In fact, bone marrow transplantation is still the standard treatment option for many blood diseases, including certain types of leukemia and lymphoma.

In recent years, new hematopoietic stem cell transplantation techniques have also been developed, such as haploidentical transplantation, which may be an option for patients who do not have a compatible bone marrow donor.

In addition, advances in stem cell transplantation technology, such as the use of cell and gene therapies, are also opening up new possibilities in the field of bone marrow transplantation.

Although there are other treatment options available, bone marrow transplantation remains an important option in hemato-oncology and other medical conditions and is expected to continue to play an important role in the future.

Bone marrow transplantation is a procedure in which the damaged or diseased bone marrow of a patient is replaced with healthy stem cells from a compatible donor. Stem cells can be collected from the donor's bone marrow or peripheral blood and then infused into the recipient patient. These stem cells can produce new blood cells in the patient's body, which helps treat certain blood diseases.

As I mentioned earlier, bone marrow transplantation continues to be an important treatment option for many blood diseases, such as leukemia, lymphoma and multiple myeloma. It can also be used in other diseases, such as certain autoimmune diseases and metabolic diseases [5].

In recent years, new hematopoietic stem cell transplantation techniques have been developed that are expanding the use of bone marrow transplantation. Haploidentical transplantation, for example, is a technique in which a partially compatible bone marrow donor, such as a parent or child, is used instead of a fully compatible donor. This expands treatment options for patients who do not have a compatible donor available.

In addition, cell and gene therapy is opening up new possibilities in the field of bone marrow transplantation. For example, a donor's T cells can be genetically modified to attack and destroy cancer cells in the recipient patient's body. These therapies are constantly evolving and are expected to be used more and more in the future.

Bone marrow transplantation continues to be an important treatment option in hemato-oncology and other medical conditions. Advances in stem cell transplant technology and cell and gene therapy are expanding treatment options and improving outcomes for patients.

Cancer is a complex and multifactorial disease that can affect different parts of the body, which makes the complete cure of cancer a challenge.

Currently, there is no single cure for all types of cancer, but there are a variety of treatments available that can help control the disease and prolong the lives of patients. These treatments may include surgery, radiotherapy, chemotherapy, targeted therapies and immunological therapies, among others.

However, there is a lot of research and advances in the field of oncology, and new therapies and technologies are being developed that can have a significant impact on the treatment of cancer. Many researchers are working on personalized therapies based on the molecular and genetic characteristics of a specific patient's cancer, which could lead to better treatment efficacy and a higher survival rate [6].

In summary, although there is currently no single cure for all types of cancer, there are many treatment options available and research continues to move towards new therapies and technologies that could improve the effectiveness of treatment and the quality of life of cancer patients.

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