



IMMUNOTHERAPY FOR BREAST CANCER

Breast cancer is the most frequently diagnosed form of cancer in women all over the world. It's also a type of cancer that is seeing promising results as a result of newly developed immunotherapy treatments.

There is an urgent need for treatments for breast cancer that are both effective and long-lasting. Of all the various forms of cancer diagnoses made globally on a yearly basis, breast cancer accounts for over 12% of the total. It is one of the most prevalent causes of death for women, second only to heart disease.

In 2012 alone there were around 1.7 million people newly diagnosed worldwide. Half a million of cases in the same year were fatal. In the United States the statistics are terrifying, with around 1 in 8 women in the U.S. and roughly 1 out of every 1,000 men, diagnosed with an invasive form of breast cancer at some stage throughout their lives.

TREATMENTS FOR BREAST CANCER

The majority of current breast cancer treatments require surgery, provided the disease is still in its early stages. The precise treatment varies according to the stage of development it is at, and the molecular characteristics the cancer possesses at the time of diagnosis. After surgery, treatment is usually continued using an additional course of radiation, chemotherapy, or other targeted forms of therapy such as hormone therapies.

IMMUNOTHERAPY FOR BREAST CANCER TREATMENT

Traditionally, breast cancer has always been considered to be an immunologically silent form of the disease. Now there are several new clinical and preclinical studies that are suggesting immunotherapy treatment does indeed have the potential to greatly improve the outlook for patients with breast cancer. In addition, immunotherapy has displayed a lot of advantages when compared to the more conventionally used forms of chemotherapy-based treatments.

While chemotherapy directly targets tumors themselves, immunotherapy works a little differently. There are now three approved immunotherapies for the treatment of breast cancer: two types of targeted antibodies (trastuzumab and pertuzumab), in addition to an antibody-drug conjugate (trastuzumab emtansine).

As well as these approved forms of treatment there are several other forms of immunotherapy that are showing very promising results for the treatment of breast cancer in recent clinical trials. These include therapeutic vaccines, which elicit immune responses, which combat antigens that relate to tumors, as well as immune modulators/checkpoint inhibitors. The latter are treatments which enhance the anti-cancer responses of the immune system. In addition to this, the use of adoptive cell therapy is making use of the transfer of adoptive T cells. This involves genetically modifying T cells, ensuring they are more effective at enhancing the anti-cancer capabilities of the immune system.

More clinical trials are underway, involving the exploration of the use of antibodies, oncolytic virus therapies, cytokines, and adjuvant immunotherapies.

HOW DOES IMMUNOTHERAPY FOR BREAST CANCER WORK?

The immune system is the body's natural means of protecting itself from various forms of disease, including all types of cancer. Under normal circumstances, the immune system recognises faulty cells and threats to the body and destroys them. But in some cases the immune system fails to detect the damaged cells and doesn't destroy them. These cells then develop into the tumors that make cancer so deadly.

Immunotherapy is still in the early stages of development as a form of cancer treatment, but essentially it works by targeting the immune system and triggering it, so that it fights cancer cells in the body, as it would any other form of damaged or diseased cells. By engaging the body's immune system like this the treatment can provide a long-term solution for cancer, as opposed to conventional treatments that tend to put cancer in remission for a period of time, but can't destroy it forever.

If immunotherapy can teach the body's immune system to essentially 'remember' how to recognize cancer cells, the body will naturally prevent the return of cancer, targeting any new cancer cells before they have a chance to develop into tumors.

With new developments in immunotherapy, these new forms of treatment are becoming increasingly effective when it comes to harnessing the amazing natural power of the immune system, and using it to kill the cells that cause breast cancer.

REFERENCES

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Meta Description: Immunotherapy offers new hope in the fight against breast cancer, with treatments being developed that train the immune system to fight and kill cancer cells.