***The Newest Advancements in Immunotherapy***

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 Immunotherapy is a certain type of treatment that is being highly investigated by doctors and oncologists in the battle against cancer. Immunotherapy is an alternative treatment that uses a patient’s own immune system to fight cancer1. Many people think of radiation or chemotherapy when thinking of methods to treat cancer; current developments being made in the search for a cure have paved the way for immunotherapy to become another highly sought out remedy.

 There are different types of immunotherapy, including monoclonal antibodies, immune checkpoint inhibitors, and cancer vaccines. Monoclonal antibodies are synthetic immune system proteins. The man-made antibodies are designed to attack specific parts of cancer cells in order to kill them efficiently and quickly1. Immune checkpoint inhibitors are drugs that encourage the immune system to recognize foreign, cancerous cells and attack them1. Lastly, cancer vaccines are another form of immunotherapy. The vaccine would contain a substance that would trigger an immune response to the presence of cancerous cells1. Cancer vaccines could be used to prevent cancer from further developing in the body, as well as be used for preventative measures.

 “The father of cancer immunotherapy” was Dr. William Coley, a doctor who studied sarcoma in a woman named Bessie in the 1890s2. Dr. Coley created a bacterial cocktail in order to create a man-made infection to act as a vaccine2. The bacterial cocktail would cause a patient’s body to initiate an immune response and recognize that the malignant tumors were an invasive, foreign body. The immune system would then attack the cancerous cells.

 The most recent advancement in immunotherapy cancer treatments is the FDA’s approval of the immunotherapy drug KEYTRUDA. KEYTRUDA is meant to initiate an immune response in order to help treat patients with “metastatic non-small-cell lung cancer”2. This drug is the only immunotherapy drug that the FDA has approved for first-line cancer treatment2. First-line cancer treatment means that the drug or method is used as the initial/first treatment given to a patient3.

 There are risks associated with immunotherapy drugs such as KEYTRUDA, as there are risks with all medicine. While immunotherapy drugs help use the immune system’s natural function to fight against cancer, the medicine can also affect the system in a way that causes it to attack regularly functioning organs and tissues in the body4. Even though there is risk involved, doctors can use drugs like KEYTRUDA as the first step in finally solving the mystery of how to cure cancer for good. A benefit to the drug is that it helps fight *advanced* cancers; this is a sign that the immunotherapy treatments being developed are not only able to help prevent cancer development and metastasis, but they can also help save the lives of patients whose cancer has been detected in later stages. These developments demonstrate a positive outlook into the future of cancer treatment, and the possibility of immunotherapy at the forefront of this research.

1American Cancer Society. What is cancer immunotherapy?

2Howard, J. Can your own immune system kill cancer?

3chemoth.com. Explanation of firs-line and second-line chemotherapy regimens

4KEYTRUDA. Learn how KEYTRUDA helps fight advanced melanoma

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