

# Anticancer Treatment via DNA Damage Response and Immune Checkpoint Targeting

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## Abstract

Anticancer therapy refers to the various treatments used to treat cancer. The goal of anticancer therapy is to eliminate cancer cells while minimizing damage to healthy cells. Cancer treatment may involve a combination of different therapies, including surgery, chemotherapy, radiation therapy, immunotherapy, targeted therapy, hormonal therapy and stem cell transplant. Each of these treatments has its own benefits and drawbacks and the choice of treatment depends on the type and stage of cancer, as well as the overall health of the patient. Surgery is a common treatment for many types of cancer. The goal of surgery is to remove the cancerous tumor from the body. The surgery may be performed using a traditional open incision or minimally invasive techniques such as laparoscopic or robotic surgery. Surgery is often combined with other treatments such as radiation therapy or chemotherapy to ensure that all cancer cells are eliminated.

**Keywords:** Tumor microenvironment • Tumor development • Cancer therapy

## Introduction

Chemotherapy is a treatment that uses drugs to kill cancer cells. These drugs are usually given by mouth or injection and they travel throughout the body to attack cancer cells. Chemotherapy can be given before or after surgery to reduce the size of the tumor or prevent cancer from coming back. It can also be used as the primary treatment for cancers that cannot be removed by surgery, such as leukemia and lymphoma. Radiation therapy is another common treatment for cancer. It uses high-energy X-rays or other types of radiation to kill cancer cells. Radiation therapy can be given externally, using a machine that directs radiation at the cancerous tumor, or internally, by placing radioactive material inside the body. Radiation therapy may be used alone or in combination with other treatments [1].

## Literature Review

Immunotherapy is a relatively new type of cancer treatment that uses the body's own immune system to fight cancer. Immunotherapy drugs are designed to target specific molecules on cancer cells, which makes it easier for the immune system to recognize and attack them. Immunotherapy has shown promising results in treating some types of cancer, particularly melanoma and lung cancer. Targeted therapy is another type of cancer treatment that targets specific molecules that are involved in the growth and spread of cancer cells. These drugs are designed to block the molecules that allow cancer cells to grow and divide. Targeted therapy is usually used to treat cancers that have specific genetic mutations, such as breast cancer or lung cancer.

## Discussion

Hormonal therapy is a type of cancer treatment that is used to treat cancers that are sensitive to hormones, such as breast and prostate cancer. Hormonal therapy works by blocking the production or activity of hormones that stimulate the growth of cancer cells. Stem cell transplant is a treatment that is used to replace damaged or destroyed bone marrow in patients with certain types of cancer, such as leukaemia and lymphoma. Stem cells are usually collected from the patient or a donor and then infused into the patient's bloodstream, where they travel to the bone marrow and begin to produce new blood cells. The choice of treatment for cancer depends on several factors, including the type and stage of cancer, the patient's overall health and the potential side effects of each treatment. Treatment decisions are usually made by a team of healthcare providers, including oncologists, surgeons and radiation oncologists. Cancer treatment can be challenging and may cause a range of physical and emotional side effects. Some of the common side effects of cancer treatment include fatigue, nausea, hair loss and changes in appetite. Patients may also experience emotional side effects such as anxiety, depression and stress. To help manage the side effects of cancer treatment, patients may work with a team of healthcare providers, including oncology nurses, social workers and dietitians. These providers can offer support and guidance on managing side effects, improving nutrition and maintaining a healthy lifestyle during and after cancer treatment [2-5].

## Conclusion

In conclusion, anticancer therapy is a diverse field that includes many different treatments for cancer. Each of was also the first person to use x-rays for medical purposes. Glver Lyon suggested in the same year that the radiation might be able to kill bacteria. However, in 1902, after conducting a number of experiments in the field, it was determined that the radiation did not kill bacteria. However, prior to the introduction of antibiotics, steroids and chemotherapeutics, it was used to help reduce inflammation in both bacterial and non-bacterial infections.

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## Conflict of Interest

None.

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