

Targeted Therapies: Precision Weapons in the War on Cancer

Personalized therapies show promise for certain cancers, such as HER2-positive breast cancer and B-cell lymphoma. AICR explains more!

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Key Takeaways:

- Targeted therapies are a type of medication that attack cancer-specific molecules. They help minimize damage to healthy cells by targeting cancer cells, plus they have fewer side effects compared to traditional chemotherapy.
- These therapies are personalized, meaning they're tailored to a patient's unique tumor profile. This increases the chances of successful outcomes and extended survival for certain cancer types, such as HER2-positive breast cancer and B-cell lymphoma.
- Ongoing research is expanding the potential of targeted therapies. Scientists are working to identify new targets, refine treatments and explore how targeted therapies can be effectively combined with other cancer treatments for better results.

In the ongoing fight against cancer, researchers have developed a new class of weapons: targeted therapies. These innovative treatments are designed to strike at the core of cancer cells while leaving healthy cells unharmed. These approaches are revolutionizing cancer treatment as we know it. Let's take a look at targeted therapies, how they work, and how they are impacting the future of cancer care.

What Are Targeted Therapies?

Targeted therapies are drugs that interfere with specific molecules involved in tumor growth and

progression. They can be given as pills, capsules or intravenously (into veins). Targeted therapy may help:

- Slow cancer growth
- Destroy cancer cells
- Relieve symptoms

FEWER SIDE EFFECTS Traditional chemotherapy can damage both cancerous and healthy cells. These new targeted drugs are made to go after cancer-specific targets, so they act on cancerous cells and provide less damage to healthy cells. This precision approach leads to improved results and fewer side effects for patients.

Types of Targeted Therapies

There are many different types of targeted therapy drugs. Each drug works differently depending on what molecule the drug is targeting. Some drugs target proteins or mutated genes in cancer cells. Oncologists can tailor cancer treatment for each person based on the types of molecules made by the tumor. Targeted therapy works when the cancer cell has the gene or protein that the drug is trying to block, so it needs to be personalized to each person's specific tumor type.

Recent studies show how effective targeted therapies can be. For instance, a targeted treatment regimen helps some people with aggressive B-cell lymphoma achieve full remission. The treatment was tested in 50 patients. The treatment shrank tumors substantially in 54 percent of patients. Amazingly, 38 percent of patients had their tumors disappear entirely.

In breast cancer, targeted therapies have led to significant improvements in survival rates for patients with HER2-positive tumors. There is immense interest in the future of targeted therapy for breast cancer, as evidenced by almost 2000 clinical trials for HER2+ breast cancer currently listed on ClinicalTrials.gov, which is the website that tracks clinical studies from around the world.

Benefits of Targeted Therapies

Researchers continue to study targeted therapies because they have many benefits to cancer patients. Here are some benefits of targeted therapies:

- Improved quality of life: With fewer side effects than traditional chemotherapy, patients may experience less disruption to their daily lives.

- Extended survival: Some targeted therapies have shown the ability to prolong life in patients with advanced cancers.
- Impeded drug resistance: Targeted therapies may help combat the development of resistance to treatment by attacking cancer cells through multiple pathways.
- Personalized treatment: These therapies can be tailored to a patient's specific cancer profile, which may lead to more effective outcomes.

Research Is Ongoing

While targeted therapies show great promise, it's important to note that research is ongoing. Scientists are working to identify new targets, improve existing therapies and understand why some patients respond better than others.

Targeted therapy may not cure cancer on its own and may be combined with other types of cancer treatment such as surgery, chemotherapy or radiation. Researchers continue to explore how these all work together for the best outcomes.

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