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Targeted therapies for cancer

Targeted therapy uses medicines to stop cancer from growing and spreading. It does this with less harm to normal cells than other treatments.

Standard chemotherapy works by killings cancer cells and some normal cells, targeted treatment zeroes in on specific targets (molecules) in or on cancer cells. These targets play a role in how cancer cells grow and survive. Using these targets, the medicine disables the cancer cells so they cannot spread.

How Does Targeted Therapy Work?

Targeted therapy medicines work in a few different ways. They may:

- Turn off the process in cancer cells that causes them to grow and spread
- Trigger cancer cells to die on their own
- Kill cancer cells directly

People with the same type of cancer may have different targets in their cancer cells. So, if your cancer does not have a specific target, the medicine will not work to stop it. Not all therapies work for all people with cancer. At the same time, different cancers may have the same target.

To see if a targeted therapy might work for you, your health care provider may:

- Take a tiny sample of your cancer
- Test the sample for the specific targets (molecules)
- If the right target is present in your cancer, then you may receive the treatment

Some targeted therapies are given as pills. Others are injected into a vein (intravenous, or IV).

Who May Get Targeted Therapy?

Targeted therapies can treat most types of cancers.

Your health care provider will decide whether targeted therapies may be an option for your type of cancer. You may receive targeted therapy along with surgery, chemotherapy, hormonal therapy, or radiation therapy. You may receive these medicines as part of your regular treatment, or as part of a clinical trial.

Side Effects

Providers thought that targeted therapies might have fewer side effects than other cancer treatments. But that turned out to be untrue. Possible side effects from targeted therapies include:

- Diarrhea
- Liver problems
- Skin problems such as rash, dry skin, and nail changes
- Problems with blood clotting and wound healing
- High blood pressure

As with any treatment, you may or may not have side effects. They may be mild or severe. Fortunately, they usually go away after treatment ends. It is a good idea to talk with your provider about what to expect. Your provider may be able to help prevent or lessen some side effects.

Limitations

Targeted therapies are promising new treatments, but they have limitations.

- Cancer cells can become resistant to these medicines.
- The target sometimes changes, so the treatment no longer works.
- The cancer may find a different way to grow and survive that does not depend on the target.
- Medicines can be difficult to develop for some targets.
- Targeted therapies are newer and cost more to make. So, they are more expensive than other cancer treatments.
- The side effects may not be tolerated by some people.

Alternative Names

Molecularly targeted anticancer agents; MTAs; Chemotherapy-targeted; Vascular endothelial growth factor-targeted; VEGF-targeted; VEGFR-targeted; Tyrosine kinase inhibitor-targeted; TKI-targeted; Personalized medicine - cancer

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