

What is Targeted Therapy?

Targeted therapy, as the name suggests, is a cancer treatment that specifically targets a person's cancer cells and the molecules which tell the cells to grow and spread. By attacking these molecules in the cancer cell, targeted therapies aim to stop the growth of these cells.

What are the different types of Targeted Therapy?


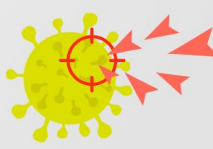

Monoclonal antibodies

Monoclonal antibodies are proteins that are designed to attach to specific targets on cancer cells. These antibodies work by marking cancer cells so that they can be identified and destroyed by the immune cells more efficiently. Some monoclonal antibodies attack cancer cells directly and prevent their growth or cause the cancer cells to self-destruct.

Small-molecule drugs

Drugs called small-molecule drugs can block the process that helps cancer cells multiply and spread.

What is the difference between Chemotherapy, Targeted Therapy and Immunotherapy?

Difference between Chemotherapy, Targeted Therapy and Immunotherapy		Centre for Clinical Haematology		
				
	Chemotherapy	Targeted Therapy	Immunotherapy	
How does it work?	Targets rapidly dividing cells (mostly cancer cells)	Targets Proteins required for cancer growth	Uses our immune system against cancer	
Side Effects	Hair loss, intestinal damage, nausea	Liver problems, diarrhea, skin rash	Autoimmune effects	
Limitations	Cancer cells develop resistance to chemotherapy, not specific	Cancer cells develop resistance	Tailored and expensive	

While chemotherapy and targeted therapy are both effective methods of cancer therapy, the key difference is that chemotherapy can also kill healthy cells when eliminating cancer cells. Whereas targeted therapy preferentially targets and attacks the cancer cells, allowing the survival of healthy cells.

How does Targeted Therapy work against cancer?

Targeted therapy works by altering the functions of the cancer cell, particularly on the part of the cell that makes it different from any other healthy cell. Targeted therapy interferes with the action of specific proteins that help the cancer cells to grow and spread to other organs. They work in different ways including:

- **Helping the immune system seek out and destroy cancer cells** – Targeted therapy can mark the specific cancer cells making it easier for the immune system to identify and destroy them. At the same time, it boosts the functions and ability of the immune system to fight against cancer.
- **Blocking signals to slow down cancer cells' growth** – Targeted therapy blocks and turns off signals that tell cancer cells to grow and divide.
- **Stopping the development of blood vessels that feed the cancer cells** – Cancer cells require a constant supply of nutrients and oxygen in order to grow and divide. Targeted therapies like angiogenesis inhibitors interfere with this growth process by preventing the formation of new blood vessels.
- **Delivering toxins directly to the cancer cells** – Some monoclonal antibodies attach to specific targets on the surface of cancer cells and destroy them. Cells that do not have the target will not be harmed.

How is Targeted Therapy administered?

Targeted therapy can be administered orally or by injection intramuscularly (into the muscle), subcutaneously (under the skin), or intravenously (through the vein).

The dose, frequency, and duration of targeted therapy vary depending on the type of cancer. Some patients are prescribed daily dosing of these medications while some patients need to follow a monthly dosing schedule.

Examples of Blood Cancers which may benefit from Targeted Therapy:

- **Chronic Myeloid Leukaemia (CML)**

Most cases of chronic myeloid leukaemia are caused by a gene called *BCR-ABL*. This gene leads to the production of an enzyme called the BCR-ABL protein which causes normal myeloid cells to start behaving like cancer cells. This was the first cancer to be treated with targeted therapy.

- **Lymphoma**

In lymphoma, there is an overproduction of B cells which is a white blood cell that fights infections. Targeted therapy drugs block the enzyme that leads to this overproduction of B cells.

- **Acute Myeloid Leukaemia**
- **Chronic Lymphocytic Leukemia**
- **Multiple Myeloma**

What are the side effects of Targeted Therapy?

The side effects of targeted therapy drugs are generally well tolerated in comparison to those of conventional chemotherapy. Side effects depend primarily on the type of drug that is given and what it targets.

The commonly reported side effects include:

1. Fatigue
2. Diarrhoea
3. Reduced appetite
4. Skin rashes
5. Abnormal changes in smell or taste
6. Sensory abnormalities
7. Blood tests abnormalities

Targeted Therapy at CFCH

At CFCH, our haematologists will tailor your treatment regimen based on the latest guidance and research as well as their extensive experience. You will be monitored closely during your course of treatment for side effects, and tests are done to assess how you are responding to treatment. Our doctors and team of nurses strive to ensure that you are fully involved and informed of your treatment and that you are as comfortable as possible during your treatment period.

Disclaimer:

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