



SKIN & BEAUTY CENTER
COSMETIC, MEDICAL & SURGICAL DERMATOLOGY

Cytotoxic

Cytotoxic drugs or cytostatics

Cytotoxic drugs or cytostatics (also cytotoxic chemotherapy) are drugs used to destroy cancer cells. Cytotoxic drugs inhibit cell division and in this way cause cancer cells to die. Cytotoxic drugs are transported in the bloodstream throughout the body.

Cytotoxic drugs can be used to destroy tumours, boost the outcomes of surgery or radiotherapy, reduce metastases and alleviate cancer symptoms. Cytostatics can be effective outside the primary tumour and also destroy small tumours that have not been detected in tests.

Cytotoxic drugs affect all dividing cells, including those of healthy tissue. But because cancer cells often divide markedly faster than normal cells, they are particularly sensitive to cytostatics. The effects on normal cells are less pronounced and healthy cells also recover faster.

The role of cytotoxic drugs in cancer therapy has decreased slightly with the development of drug therapy. However, they continue to be widely used.

Several types of cytotoxic drugs are used in cancer therapy that together have different kinds of effect. The most usual method is to administer a combination of several different cytotoxic

drugs. The effectiveness of chemotherapy depends on the type of tumour, its composition, rate of development and proportion of cells in the distribution stage.

Sometimes, cytostatics are administered as high-dose chemotherapy. This is used in treating leukaemia, some lymphomas and brain tumours in children. At the same time, stem cell transplants are required as high-dose chemotherapy can completely destroy bone marrow. The function of bone marrow can be restored following chemotherapy using stem cell transplants. The stem cells can be the patients' own or can be obtained from a donor.

Having chemotherapy

Chemotherapy is usually given on an individual basis and according to the stage of cancer distribution. The length of treatment and type of chemotherapy drug used vary. In most cases, the national treatment guidelines provide the context for the use of chemotherapy.

You can take cytotoxic drugs in tablet form or intravenously. Sometimes the drug is administered locally, for instance into the pleura, bladder or spinal cavity. Intravenous treatment is usually given in hospital but after receiving the drip you are able to go home.

Courses of treatment are generally given at 3 – 4 week intervals. In this way the cancer cells do not have time to recover but normal tissue usually does. Chemotherapy requires the close monitoring of blood counts.

Cytotoxic drugs have adverse side effects. However, your functional capacity during treatment is usually good.

Side effects of cytotoxic drugs

Cytotoxic drugs reach almost all cells in the body and they kill healthy cells as well as cancer cells. This is why chemotherapy has adverse side effects. Treatment usually causes nausea, hair loss and fatigue. The side effects vary from one person to another. Some of the side effects disappear after a few days, but it usually takes a few months for you to make an overall recovery from chemotherapy.

Because cytostatics affect dividing cells, many of the side effects are concentrated on renewable tissue, such as hair, bone marrow and mucous membranes. The type and severity of the side effects depend on the drugs used, dosages, your overall condition and how our body responds to the drugs. The most common side effects can nowadays be effectively prevented and treated.

Below we list the most common side effects of cytotoxic drugs. You will be able to get more detailed information on the side effects and their treatment from the medical staff treating you.

Hair loss

The use of certain cytotoxic drugs causes hair growth to stop, which results in either complete or partial baldness and the loss of other bodily hair. Hair regrows once chemotherapy finishes. Not all cytotoxic drugs cause hair loss. Patients on chemotherapy can obtain wigs free of charge from the hospital subject to payment obligations.

[Rehabilitation](#)

Nausea

Nausea is the most common side effect of chemotherapy. As with other adverse effects of chemotherapy, the symptoms of nausea depend on the drug and the dosage you are given. Nausea may result in vomiting a few hours after treatment or as prolonged queasiness that may last up to 2 – 4 days.

However modern preventive medication helps reduce the threat of nausea and alleviate it considerably. The effectiveness of nausea prophylaxis varies with the type of treatment.

Damage to the mouth and pharynx mucosa

The mucous membranes of your mouth and pharynx are rapidly renewable tissues and so are vulnerable to the adverse effects of cytotoxic drugs. The extent of damage to the mucous membranes can vary.

Following chemotherapy the mucous membranes of your mouth and pharynx may start to redden and develop a covering and sores. Drinking and eating are painful and, most problematic, even swallowing saliva is difficult. Fungal infections are common and herpes is possible.

Before beginning chemotherapy, it is a good idea to go to a dentist to have infections treated and get advice on enhanced dental care and using fluoride.

Diarrhoea

Diarrhoea is a common side effect of chemotherapy. It is caused by damage to the intestinal mucous membranes. If diarrhoea is a problem, your bowel function can be slowed down using antidiarrhoeal medication.

Damage to bone marrow

Blood cells are formed in bone marrow, which we have in our large bones. Chemotherapy may cause a drop in white blood cell, blood platelet and haemoglobin counts. The side effects on bone marrow vary with the drugs and their dosage. The most important side effect is usually a drop in your white blood cell count.

Usually, damage to bone marrow is temporary and blood counts gradually improve. The adverse effects on bone marrow puts a limit on using multiple doses of cytotoxic drugs. Damage to the bone marrow increases the risks of infection and communicable disease.

Disadvantages of chemotherapy also include

- constipation
- symptoms affecting the mucous membranes of the eyes
- swelling
- changes to fingernails and toenails
- numbness in the hands and soles of the feet
- muscle pain
- hypersensitivity
- premature menopause symptoms in women due to oestrogen deficiency

Chemotherapy sequelae

Sometimes cytotoxic drugs have long-term adverse side effects and late effects. These include the risk of heart damage, lung damage and kidney failure.

Most adverse side effects occur already during treatment, but heart damage, for instance, may occur only decades later. There are, however, effective drugs for preventing and treating

adverse side effects. The later occurrence of secondary complications is fairly rare.

With some cytotoxic drugs there is a maximum dosage that cannot be safely exceeded at any time during the patient's life.

Source: <https://www.allaboutcancer.fi/treatment-and-rehabilitation/cytostatics/>

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