

CHEMOTHERAPY: TREATMENT, ADVERSE EFFECTS AND LIMITATIONS**TONY TRAN***

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Chemotherapy is a type of cancer treatment that uses one or more anti-cancer drugs as part of a standard chemotherapy process. Chemotherapy may involve a combination of drugs, or it may be aimed at prolonging life or reducing symptoms. Chemotherapy is one of the major medical disciplines given mainly for cancer pharmacotherapy, called medical oncology. The term chemotherapy mean the indirect use of toxins within a cell to prevent cell division or damage DNA, which is why blocking DNA repair may increase chemotherapy. The definition of the term chemotherapy does not include specialized agents that block the transmission of signal outside the cell. The development of therapies with specific molecular or genetic goals, which prevent the growth-promoting signals from ancient endocrine hormones now called hormonal therapies. In contrast, other barriers to growth symptoms such as those associated with receptor tyrosine kinases are called targeted therapies. Importantly, drug use creates a systematic treatment for cancer because they are absorbed into the bloodstream and are therefore able to fight cancer in any anatomic area of the body. Formal treatment is often used in conjunction with other therapies that are effective in the anatomic area where they are diagnosed with cancer such as radiation therapy, surgery or treatment for hyperthermia. Traditional chemotherapeutic agents are cytotoxic in a way that disrupts cell division but cancer cells differ greatly in their readiness to react easily to these agents. To a large extent, chemotherapy can be thought of as a way to damage cells, which can lead to cell death if apoptosis is initiated. Many side effects of chemotherapy can be traced to damage to normal cells that break down quickly and thus become resistant to mitotic drugs: bone marrow cells, digestive tract and hair follicles. This leads to the most common side effects of chemotherapy: decreased blood cell production, hence the immune system, inflammation of the digestive tract, and hair loss. Because of the effect especially on lymphocytes, chemotherapy drugs are often found in many diseases caused by the harmful overuse of the immune system. These include rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis, vasculitis and many others. Consolidation chemotherapy is given after a pardon to prolong the life of the disease and improve overall survival. The medicine used is the same as the drug that was released. Healing chemotherapy or antidepressant therapy is given not for therapeutic purposes, but to reduce the burden of the tumor and prolong life. All forms of chemo-

therapy require the recipient to be able to treat. The operating condition is often used as a measure to determine whether a person can receive chemotherapy, or whether it is necessary to reduce the dose. Because only a small percentage of tumor cells die with each treatment, repeated doses should be given to further reduce the tumor size. Chemotherapeutic methods have many side effects depending on the type of medication used. The most common over-the-counter drugs mainly affect the cells that divide quickly, such as blood cells and concentrated cells in the mouth, stomach, and intestines. Nausea, vomiting, anorexia, diarrhea, stomach cramps, and constipation are common side effects of drugs that kill rapidly dividing cells. Malnutrition and dehydration may be the result when the recipient does not eat or drink enough, or when a person vomits frequently, due to intestinal damage. This can lead to rapid weight loss, or occasional weight loss, if a person eats too much in an effort to relieve nausea or heartburn. Anemia can be a combination of myelosuppressive chemotherapy, as well as cancer-related causes such as bleeding, destruction of blood cells, genetic disease, kidney failure, malnutrition or chronic anemia. Resistance is a major cause of treatment failure in chemotherapeutic drugs. There are a number of possible causes of cancer resistance, one of which is the presence of small pumps on the surface of cancer cells that actively stimulate chemotherapy from within the cell to the outside. Hyperthermia therapy is a treatment for cancer that can be a powerful tool when used in combination with chemotherapy or radiation therapy. Heat can be applied locally to the plant area, which will expand the plant's blood vessels, allowing more chemotherapeutic drugs to enter the plant. In addition, the cell membrane of the tumor will have holes, allowing more chemotherapeutic drug to enter the tumor cell.

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