



## REVIEW OF RESEARCH

### SIDE EFFECTS OF CHEMOTHERAPY IN CANCER PATIENTS AND EVALUATION OF PATIENTS OPINION ABOUT STARVATION BASED DIFFERENTIAL CHEMOTHERAPY

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#### ABSTRACT:

*Chemotherapy affects all cells that grow and divide in the body. These include cancer cells and normal cells, such as new blood cells in the bone marrow or cells of the mouth, stomach, skin, hair, and reproductive organs. When chemotherapy damages normal cells, it causes side effects. Depending on whether you experience side effects and how severe they are, the type and dose of the medication you are given and the subsequent reaction from one treatment cycle to the next. Many side effects are short-term and can be managed. Gradually improve once treatment is stopped and normal, healthy cells are healed. Sometimes chemotherapy has long-term side effects and does not go away. These can include damage to your heart, lungs, nerve endings, kidneys or reproductive organs. You may worry about the side effects of chemotherapy. Tell your doctor or nurse if you are experiencing long-term side effects or feel unwell. Drugs used for chemotherapy are constantly being refined so that you get the best possible results and minimize potential side effects. This section explains ways to manage uncomfortable side effects.*

**KEYBOARD:** Chemotherapy, Cancer, Side Effects, Starvation.

#### INTRODUCTION:

Despite the improved efficacy and enhanced survival through modern treatments, the side effects of anti-cancer chemotherapy and long-term sequelae remain a major source of concern for both patients and clinicians. Current drugs or other approaches to counteracting chemotherapy-induced adverse effects are often incomplete, often not addressing the potential long-term sequel or even leading to other side effects that only aggravate patients' discomfort. New ways to improve the tolerance and lowering of cancer

chemotherapy are urgently needed, and current research topics focus on this topic and highlight several areas of progress. Nausea and vomiting are the most serious side effects of patients receiving cancer chemotherapy. Although current treatments are reasonably effective in controlling acute chemotherapy-induced nausea and vomiting (CINV) in most patients, managing delayed CINV is more difficult. Rapoport's review describes the pathogenesis, occurrence, and current treatment of CINV, and this symptom is frequently controlled less frequently, even when acute CINV is



adequately managed. The release of substance P and its effect on neurokinin-1 receptors is an important step in the development of delayed CINV. According to Rudd et al. describe a pre-clinical study in animal models of an NK-1 antagonist, Netopitant, as a broad antiemetic. In fact, this study has paved the way for the inclusion of this particular drug in the clinic. One drawback of rat models in the development of antiemetic drugs is the lack of emetic reflexes in rats. However, indirect markers can be used and Yamamoto et al. describe the new possible indirect marker of nausea based on observing facial expressions in the rat. These authors showed that the ratio between longitudinal and axial eye dimensions was low after cisplatin administration, and this effect was prevented by conventional resistors.

There are some chemo-protectants, such as glutathione, amifostine, mesna, and dexrazoxin, that have been reported to provide drug-based protection over certain tissue types, but these drugs do not show any improvement in overall survival, for some reasons they also protect against cancer. As cells, regardless of the drugs specifically targeted for cancer cells, there should be a basically novel approach that specifically destroys cancer cells but not normal cells. Starvation is not cancerous cells but has been proven to selectively protect normal cells. Preliminary data suggest that hunger-dependent chemotherapy is not only feasible and safe in cancer patients, but is also effective in reducing commonly reported chemotherapy side effects. Dietary restriction (DR) or calorie restriction (CR) is known to be effective in various animal models against chronic age-related diseases (i.e. diabetes, cardiovascular diseases, and most importantly, cancer). Recently starvation has proven that selectively protects normal cells and rats, but cancer cells are not protected from various types of chemotherapy drugs. But so far, there is limited evidence in the literature on the implementation of hunger-based discriminatory chemotherapy. In the case of 10 patients, reports show that hunger-based differentiation chemotherapy is not only safe and feasible, but also reduces the association-side effects of chemotherapy. The present study was conducted to examine the common side effects of chemotherapy and its relationship to different socioeconomic factors and patient opinion about appetite. Hunger-based differential chemo-therapy seems to be helpful in eliminating the side effects of chemotherapy, but it is very important to know the patients' opinion in accepting new interventions. Therefore, this survey also included the opinion of hunger for different time appetites to reduce the side effects of chemotherapeutic treatment of patients.

### PREPARATION OF SIDE EFFECTS:

Some have no side effects; some have a range of experience. If you have side effects, they will usually begin within the first few weeks of treatment, and may become more severe during each treatment cycle. Before treatment begins, your doctor or caregiver will discuss the side effects of monitoring or reporting, how to prevent or manage them, and who to contact after a few hours if you need help.

1. **Hair Loss:** Most people with chemotherapy have concerns about hair loss (alopecia). Whether or not you lose your hair will depend on the medication you decide on. Some people lose all their hair quickly and others lose it after a long treatment, while others just lose a little hair or nothing. Although hair loss is the most common, you can still find eyebrows and eyelashes and you may lose hair from your under arms, legs, chest and pubic region. If hair loss occurs, it usually begins 2-3 weeks after the first treatment. Before your hair gets out and done, your scalp may feel hot, itchy, tender or itchy. Some people have found that the skin on their head is more sensitive and may develop acne on their scalp. It takes 4-12 months for the entire hair to grow back after the chemotherapy ends. When your hair first grows back, it can be different colors or curly (even if you always have straight hair). Over time, your hair usually returns to its original state.

Most people find it difficult to brush their hair. Your hair can help form part of your self-esteem - its loss can affect your confidence and make you feel sad or insecure. For many, this is a public sign of a cancer diagnosis. Talking to your treatment team may help.

2. **Mouth Sores:** Some chemotherapy drugs cause mouth sores, such as ulcers or infections. This is more likely if you are taking or taking radiation therapy on the head, neck, or chest, or if you have dental or

gynecological problems. Tell your doctor if you notice any sores, ulcers, or dense pressures or have difficulty swallowing.

3. **Changes in Skin and Nail:** Some chemotherapy drugs may cause your skin to become pale, dark or dry and dry. Your skin will be more sensitive to the sun during the treatment and for several months afterwards. Some people also change their nails and become darker than usual or develop white lines along or across them. Your nails can become dull and dry. These changes usually increase.
4. **Changes and Memory:** Some people say they have difficulty concentrating, focusing, and remembering things when they have chemotherapy. This is known as a cancer-related cognitive impairment or sometimes "chemo brain" or "cancer fog." Thinking or memory changes can be caused by treatment or medications, fatigue and sleep problems, or emotional anxiety such as stress or depression. These problems usually improve over time, though some people experience problems for many years. Tell your doctor about the changes in your thinking and memory and if you have problems returning to your daily life or your work.
5. **Affects o Blood:** Chemotherapy can cause damage to new cells as they divide rapidly and reduce the number of blood cells (your blood count). Lack of blood cells can lead to anemia, infection, or bleeding problems. At the beginning of the treatment and before chemotherapy, take a blood test before each chemotherapy to check if your blood count has returned to normal.
6. **Infections:** Reducing the number of white blood cells during chemotherapy can reduce your immune system. This makes you more likely to be infected and less able to fight off any infections that may occur. Your doctor may recommend antibiotics as a precaution against the infection. Many types of white blood cells make up the total number of white cells. A type of white blood cells, known as neutrophils, protects against infection by destroying the harmful bacteria and yeasts that enter the body. During chemotherapy, some people have lower levels of neutrophils. This is known as neutropenia. If you have neutropenia, you may be injected with a growth factor drug called granulocyte-colony stimulating factor (G-CSF) after chemotherapy to encourage bone marrow to become more white blood cells. Your doctor or nurse will talk to you about possible side effects. Some may experience bone pain or tenderness or show signs of anorexia at the injection site. During chemotherapy treatment, even a minor infection can quickly become severe. See below if you need to contact your doctor right away.

#### MATERIAL AND METHODS:

A comprehensive questionnaire was established, the first of which was related to basic information, socioeconomic status, patients' perceptions about hunger for different periods, and their desire for hunger-based chemotherapy. The second part of the questionnaire was about the side effects of chemotherapy, which included 12 easily identifiable and most commonly occurring side effects. The severity or severity of the side effects was categorized into four types, from 0 to 3, with no side effects, mild, moderate, and severe residual-tively. The study was conducted at Tata Cancer Hospital Mumbai from June to July 3. Six patients with multiple carcinomas as a whole were exposed to the study. The questionnaire was filled in by the interviewees, as the patients stated because most of the patients were illiterate and signed by the patients or their relatives.

#### RESULT AND DISCUSSION:

In this survey researcher has selected 100 patients in which 70 were female and 30 are male patients, in this study researcher has observed 65% patients were suffering with breast cancer and 15% patients were suffering with uterine cancer which are the common cancer with female patient and remaining 20% patient are men who are suffering with GIT cancer.

**Table 1.1 Side Effects of Chemotherapy and their level of Severity**

Sr. no.	Side effects	No (%)	Mild (%)	Moderate (%)	Severe (%)
1	Headache	61	12	25	7
2	Fatigue	13	14	39	32
3	Weakness	2	16	30	51
4	Hair loss	26	10	20	55
5	Nausea	20	12	35	23
6	Vomiting	28	25	28	25
7	Diarrhea	72	10	12	11
8	Abdominal cramps	58	20	14	2
9	Mouth sores	50	16	20	11
10	Dry mouth	24	10	41	20
11	Memory impairment	92	5	11	0
12	Numbness	46	22	21	5

Source: Observation

The data were examined to check the significance of the data and include headache, fatigue, anemia, hair loss, nausea, vomiting, diarrhea, abdominal cramps, mouth sores, dry mouth, memory impairment and numbness in patients. Depending on the gender, type of cancer, its de- ration, other diseases, time of starvation, financial status, smoking, number of cigarettes, occupation, willingness, and physical health. The OV Nova test was conducted for all changes based on gender, type of cancer, its duration, other prognosis, and time of starvation, financial status, and smoking, number of cigarettes, occupation, residence and physical health. There was a significant difference between men and women for hair loss and no difference in the other variables, depending on the gender of the mouse. 68% of men lose hair while 74% of women lose hair. 30.1% of men suffer from mouth sores while 55.4% of women are infected.

Significant differences in hair loss were also observed in different types of cancer. There was a significant difference in headaches, fatigue, and anemia when variables were examined based on the duration of the cancer. It is readily understood that as the duration of the cancer progresses and hence the most common side effects of the chemotherapy cycle are headache, fatigue and anemia. During cancer therapy where cancer cells are destroyed, normal cells are also affected. Fatigue and anemia are the primary symptoms of any degeneration in the body. As these problems worsen, headaches, fatigue and anemia are also crucial. Compared with many other diseases in cancer patients, diarrhea status showed a significant difference. Other illnesses experienced by patients include diabetes, high blood pressure, blood pressure, car diarrhea problems, stomach upset and lung problems. Diarrhea was significant in patients already suffering from other illnesses, especially in patients with diabetes, heart, stomach, and lung problems. It is possible that these diseases may cause diarrhea as a side effect of chemotherapy, but there is no solid feedback or evidence in the literature. When patients were compared based on the number of cigarettes used, a significant difference was heard. When patients were compared on the basis of their cells, significant differences were observed in diarrhea, abdominal cramps, and memory. Female patients had more occupation with other housewives than any other cell, and some of the men suffered from the above three or two collective strengths. When compared to patients in residence, significant differences were observed in memory loss. Out of the 14 cases of memory, only 2 are rural and all others are urban. When comparing them on the basis of physical health, there was no difference in walking. Abdominal cramps and mouth sores also showed significant differences when patients were divided into three age groups, adolescents, adults,

and older. Teens suffer most from abdominal cramps and mouth pain.

### CONCLUSION:

Cancer is a disease that is rapidly increasing worldwide and the mortality rate is increasing worldwide and especially in India. Mainly cancer treatment is based on selective killing of cancer cells but not on normal cells. Chemotherapy is the most widely used treatment for a wide variety of cancer types. In the past, chemotherapeutic drugs were widely considered to be targeted and selective for tumor cells, but it is now well-known that chemotherapeutic drugs also damage normal cells, causing various side effects and in some cases, death. These side effects include headache, fatigue, anemia, hair loss, nausea, vomiting, diarrhea, abdominal cramps, mouth sores, dry mouth, memory weakness and jaundice.

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