

Assessment of Various Side Effects Experienced by Cancer Patients during Chemotherapy: A Descriptive Study

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Abstract: ***Introduction:** Cancer, known medically as malignant neoplasia and is considered as second largest killer disease next to heart diseases. Cancer is a broad group of disease involving unregulated cell growth. Cancer can develop in any organ or tissue and can destroy normal tissues, which decreases functions of that tissues or organ. Most people fear cancer and consider a cancer diagnosis to involve suffering and death. **Aim:** To assess the incidence of cancer and chemotherapy and various side effects experienced by cancer patients during chemotherapy & to assess the association with various demographic variables. **Material & Methods:** A quantitative approach with descriptive design was used to collect data conveniently from 70 subjects suffering from various types of cancer and experienced chemotherapeutic side effects at cancer ward, DMCH, Ludhiana. **Results:** The results revealed that out of total 70 subjects most of subjects were with mean age (50.29 ± 12.92) females, married and belonged to urban community. Majority of subjects were non-working, vegetarian and belonged to upper middle class (II). It was found that out of total 70 subjects' majority of them 38.58% were suffering from stage II of other types of cancer. Most of the subjects experienced general weakness (94.28%) and oral mucositis (55.71%) as common side effects of chemotherapy. **Conclusion:** It is concluded that most of the females from urban community are suffering from various types of cancer at stage II and receiving cycle three chemotherapy experienced general weakness and oral mucositis as common side effects of chemotherapy.*

Keywords: Cancer, incidence, Chemotherapy, Side effects

1. Introduction & Background of the Study

Cancer is not a new disease as is wrongly believed. However, these days its incidence is on the rise. Cancer, known medically as malignant neoplasia and is considered as second largest killer disease next to heart diseases. Projections based on GLOBOCAN 2012 estimates a substantive increase to 19.3 million new cancer cases per year by 2025, due to growth and ageing of new population¹. At present about 20-25% of the human population in the world die of cancer and it is feared that in future it may become the greatest enemy of mankind. According to the world Cancer Report from WHO (2013), nearly 7 lakhs Indians die due to cancer. Cancer can develop in any organ or tissue and can destroy normal tissues, which decreases functions of that tissues or organ^{1,2}. Cancer does not develop abruptly. It is the cumulative result of the effects of an agent on the body for several years or decades. Many risk factors such as radiation, chemicals in the environment, genetic predisposition, nutritional factors, immunological deficiencies, stress and negative mental state may induce or contribute to the development of cancer. It may also be induced by some viruses. Only 20 to 40% of all cancers are caused by hazardous conditions at the work place and other environmental pollutants³.

Cancer is treated in several ways, depending on each person's medical condition and type of cancer. Many treatment options for cancer exist with the primary ones including surgery, chemotherapy, radiation therapy, and palliative care. However, in management of cancer, among all treatment modalities, chemotherapy is the commonest treatment modality which controls the uncontrolled cell division by interfering with cellular function & reproduction⁴.

Different chemotherapy regimens work in different ways to fight cancer cells. Often, a combination of chemotherapy drugs is used to fight a specific cancer. Certain chemotherapy drugs may be given in a specific order depending on the type of cancer it is being used to treat cancer⁵. While chemotherapy can be quite effective in treating certain cancers, chemotherapy drugs reach all parts of the body, not just the cancer cells then likelihood is high that aggressive treatment will have toxic effect on normal cells as well^{4, 5, 6}. Because of this reason, there may be many side effects during treatment which may be severe, mild or absent^{4,5}. The severity of side effects (how "bad" they are) varies greatly from person to person while side effects can be unpleasant, they must be weighed against the need to kill the cancer cells⁶. There are various common side effects of chemotherapy like nausea, vomiting, hair loss, generalized weakness, and decrease in blood cell count, abdominal pain, allergic reactions, gastritis, constipation and most common oral mucositis^{2,4}. The evidence suggested that most of patients reported fatigue (85%), oral mucositis (76%), alopecia(66.7%) ,vomiting (58.3%) and various other side effects. In few patients these chemotherapeutic side effects becomes the major cause of various other morbidities and mortalities⁷.

Objectives of the Study:

- 1) To assess the incidence of various types of cancer among patients admitted at Oncology ward DMCH, Ludhiana
- 2) To assess the incidence of various side effects of chemotherapy among cancer patients at Oncology ward, DMCH, Ludhiana
- 3) To assess the relationship of various chemotherapeutic side effects with sociodemographic variables.

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2. Material & Methods

Research approach & design: A quantitative research approach was used to carry out a descriptive design to assess the incidence of various types of cancer and chemotherapy related side effects among cancer patients at Oncology ward, DMCH, Ludhiana.

Sample & Sampling technique: A convenient sampling technique was used to collect data from 70 subjects admitted in Oncology ward of DMCH, Ludhiana.

Description of Tool: After extensive exploration of literature and expert opinion the tool was developed and divided into two parts:

- 1) Part I: The socio demographic profile was developed with components age, gender, marital status, socioeconomic status and education level.
- 2) Part II: A 10 item questionnaire was developed to assess the incidence of various types of cancer and chemotherapy related side effects.
- 3) Part III: Chemotherapy profile sheet

Ethical Consideration

The permission to conduct was taken from Research ethical committee of DMCH, Ludhiana. A written informed consent was obtained from each subject after informing them about the study and its objectives. Confidentiality and privacy of the study subjects was maintained throughout the study.

3. Results

Table 1: Frequency and percentage distribution of subjects as per sociodemographic variables, N=70

S. No	Variables	Frequency(f)	Percentage (%)
1.	Age (in years)		
	18-29	05	07.14
	30-41	08	11.43
	42-53	26	37.14
	54-65	31	44.29
2.	Gender		
	Male	19	27.14
	Female	51	72.86
3.	Marital Status		
	Married	64	91.43
	Unmarried	06	08.57
4.	Education		
	Illiterate	05	07.14
	Primary	22	31.43
	Secondary	27	38.57
	Graduation & above	16	22.86
5.	Working status		
	Working	23	32.86
	Non working	47	67.14
6.	Dietary habits		
	Vegetarian	46	65.71
	Non vegetarian	22	31.43
	Lacto ova vegetarian	02	02.86
7.	Habitat		
	Rural	42	60
	Urban	28	40
8.	Socio economic status		
	Upper (I)	06	08.57
	Upper Middle (I)	56	80.00
	Lower middle(III)	08	11.43

Mean Age (50.29± 12.92)

Table 1 illustrates that more than half of the study subjects were females with mean age 50.29±12.92 and most of them were married educated at secondary level. More than half subjects were vegetarian and non working whereas maximum were from upper middle (I) socio economic status. More than half subjects were from urban community.

Table 2: Distribution of subjects as per incidence of various types of cancer, N=70

Sr. No.	Variables (Type of cancer)	Frequency (f)	Percentage (%)
1.	Ca Breast	20	28.50
2.	Ca ovary	19	27.14
3.	Ca prostrate	04	05.71
4.	Others*	27	38.58

*Others: (myeloma, Hodgkin's disease, Ca bladder, Hypernephroma, Ca lungs, Peri- ampullary tumor, Ca gall bladder, Ca metatarsal, Ca cervix, Ca colon, Ca esophagus, Ca pancreas, Ca endometrium, Ca Jejunum, Leukemia)

Table 2 demonstrates that out of total 70 subjects more than half subjects 27(38.58%) were suffering from other type of cancer i.e. myeloma, hodgkin's disease, ca bladder, hypernephroma, ca lungs, peri-ampullary tumor, ca gall bladder, ca metatarsal, ca cervix, ca colon, ca esophagus, ca pancreas, ca endometrium, ca jejunum, leukemia followed by Ca Breast (28.50) and Ca ovary (27.14) . Only few (05.71) were suffering from Ca Prostrate.

Table 3: Distribution of subjects as per type of chemotherapy received, N=70

S. No.	Variables	Frequency (f)	Percentage (%)
1.	Duration of cancer		
	0-3 months	30	42.86
	4-8 months	34	48.57
	≥ 9months	06	08.57
2.	Stage of cancer		
	I	03	04.29
	II	44	62.85
	III	20	28.57
	IV	03	04.29
3.	Type of chemotherapy		
	Infusion	70	100
4.	Type of chemotherapy regimen		
	Gemcitabin + Kemocarb	20	28.57
	Endoxan + 5 F.U.	14	20.00
	Leukoverin + Oxitan	03	04.29
	Paclitaxel + Carboplatin	32	45.71
	Gemcitabin + Oxitan	01	01.43
5.	Chemotherapy Cycle		
	2-4	45	64.29
	5-7	17	24.29
	≥7	08	11.42
6.	Duration between two cycles		
	<3 weeks	49	70.00
	>3 weeks	21	30.00

Mean duration of cancer (11.67 ± 08.50)

Mean chemotherapy cycle (4.20 ± 1.69)

Table 3 demonstrates that out of total 70 subjects most of subjects were diagnosed with cancer duration 4-8 months with mean duration (11.67 ± 8.50) and were at stage –II of the disease. All the subjects were receiving infusion type of chemotherapy and majorities were receiving paclitaxel +

carboplatin (45.71) chemotherapy regimen. Majority (64.29) of subjects received 2-4 chemotherapy cycles and most of them (70) had < 3 weeks of duration between 2 cycles of chemotherapy.

*Others: (Numbness in hands and feet, Constipation, Loss of appetite, Taste change)
Multiple responses

Table 4: Distribution of subjects as per common side effects of chemotherapy, N=70

Sr. no.	Variables Common side effects	Frequency (f)	Percentage (%)
1.	General weakness	66	94.28
2.	Oral mucositis	39	55.71
3.	Alopecia	18	25.71
4.	Gastritis	10	14.28
5.	Nausea/ vomiting	09	12.85
6.	*Others	04	05.71

Table 4 & Fig. 1 illustrates that most of the subjects (94.28) were suffering from general weakness followed by oral mucositis (55.71) whereas less than half (25.71) were suffering from alopecia. A few (14.28) reported gastritis as side effect of chemotherapy followed by nausea / vomiting (12.85) while only some (05.71) reported other type of side effects like Numbness in hands and feet, Constipation, Loss of appetite, Taste change

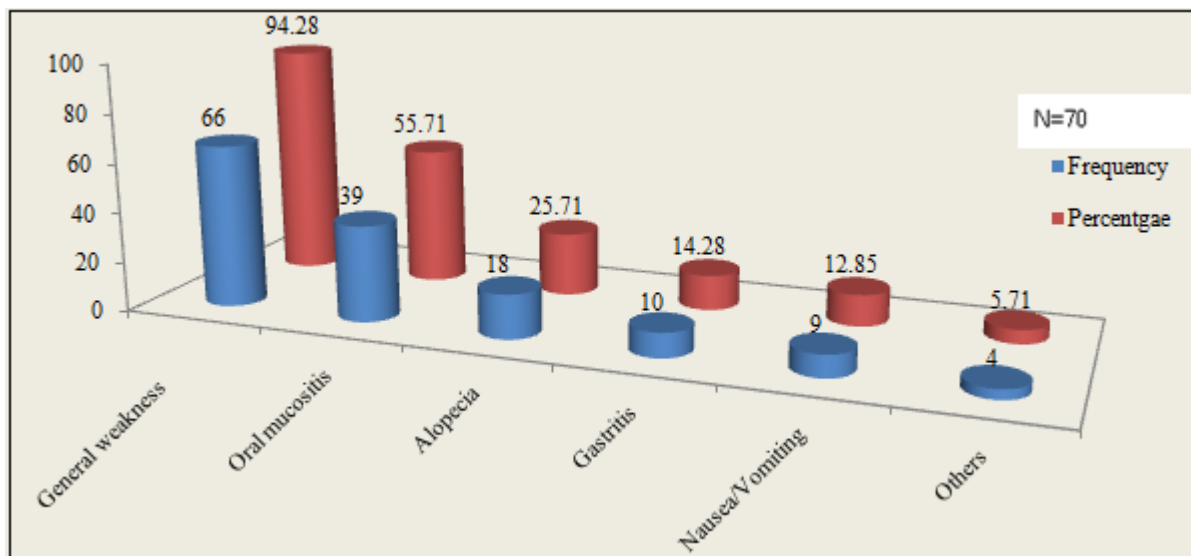


Figure 1: Distribution of subjects as per chemotherapy side effects

4. Discussion

The present study revealed that out of total 70 subjects near to half subjects (44.28%) was under age group 54-60 years of age with mean age 50.29 ± 12.92 and most of subjects (73%) were females and majority (85%) were married while less than half number of subjects (38.57%) were holding secondary level of education in experimental and control group. Moreover, out of total 70 subjects most of subjects (67.14%) were non-working and consuming vegetarian diet (65.71%) while more than half number of subject (60%) belonged to rural habitat and majority (80%) were from upper middle (II) socio economic category in experimental and control group respectively.

The similar results supported by study conducted by Jignasa amrutal Sathwara et.al. at Mumbai, India, "Sociodemographic factors and late stage diagnosis of breast cancer in India: A hospitalized study". The results revealed that out of total 1210 subjects with mean age of 49 years and 73% from urban community whereas 81% were married. Maximum subjects 85.8% were non working and less than half subjects 33.2% were holding secondary level of education.

The present study revealed that most of the subjects (94.28) were suffering from general weakness followed by oral

mucositis (55.71) whereas less than half (25.71) were suffering from alopecia. A few (14.28) reported gastritis as side effect of chemotherapy followed by nausea / vomiting (12.85) while only some (05.71) reported other type of side effects like Numbness in hands and feet, Constipation, Loss of appetite, Taste change etc.

The results are supported by Alison Pearce et al. (2017) conducted a study of Incidence and severity of self reported chemotherapy side effects in routine care: A prospective cohort study. The results demonstrated that out of total 449 subjects who received chemotherapy and maximum subjects 85% suffered from fatigue followed by diarrhoea 74% and mucositis 72%. More than half of the subjects (63%) were suffering from vomiting as a chemotherapy side effect.

5. Conclusion

The study concluded that most of females were suffering from Ca breast and receiving infusion type of chemotherapy. Most of them reported the general weakness and oral mucositis as common side effects of chemotherapy.

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