

Prescribing Pattern of Anticancer Drugs in a Medical Oncology Department of a Tertiary Care Teaching Hospital

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Abstract

Background: Study of prescribing pattern is a potential tool in ascertaining the role of drugs in society and it has to be carried out at any hospital periodically. **Objective:** The study is aimed to study the prescribing pattern of anticancer drugs in medical oncology department of a tertiary care hospital, Tamilnadu. **Materials and Methods:** Each prescription was studied for the patient's demographic details, name of the drug, dose, dosage form, frequency, duration etc. Commonly used anticancer drugs and various types of cancer were noted and the percentage of drugs prescribed from national essential drug list was assessed. **Results:** The study revealed that majority of cancer cases was evident in the age groups between 55 to 65 years. Out of 328 patients, 179 were female and 149 were male patients. Breast cancer was found to be most prevalent among females followed by ovary and stomach cancer. In male, lung cancer was more common followed by stomach. The majority of drugs prescribed were alkylating agents followed by antimetabolites, plant derivatives, cytotoxic antibiotics and glucocorticoids. **Conclusion:** The utilization of anticancer drugs in this hospital was found to be rational and more than 70% of drugs were prescribed from the National essential drug list. Assessment of pattern of prescribing should be conducted periodically to minimize the untoward effects at least to some extent.

Keywords: Prescribing pattern; Cancer; Prescription

Introduction

Prescribing pattern is a potential tool in ascertaining the role of drugs in society. It greatly helps in healthcare budgets making. Prescribing pattern is a process of analysis of prescription use of drugs. [1] Potential hazard to the patients are led by inappropriate use of drugs. Periodic review of the drug utilization is one way to prevent such a hazards to patients and also to ensure the safety and effectiveness of treatment. [2] Physicians play a vital role in making healthcare related decisions about the usage of health resources. However, with respect to drugs, pharmacists are the bridging bond between the patients and their usage of drugs. By doing prescription analysis, pharmacists interact with their patients about their medications. The present study is carried out by pharmacists in analyzing the drug utilization review of anticancer drugs with the objectives (1) to analyze the classes of drugs being prescribed, (2) to study the usage of adjuvant drugs accompanied in the drug therapy, (3) to analyze the anticancer drugs prescribed from the National essential drug list.

Inappropriate use of drugs is a common problem all over the world especially in the developing countries. Due to continuous increase in the number of medicines and multiple options in the treatment provides an increase in the inappropriate use of medicine. The effect of irrational use of the drugs in the healthcare system leads to decrease in the quality of medicine or

therapy which raises the morbidity and mortality and also leads to risk of untoward effects. Especially, in a developing country like India, inappropriate prescription is a common problem where this study of drug use evaluation can be useful. Most of the studies of drug use evaluation have followed effective methods to determine their outcome. [3]

Cancer is widely accepted as one of the most frightening the humans especially in developing countries. Cancer annually affects 10 million people and causes 6 million deaths worldwide. It is expected that 300 million new cases of cancer and 200 million deaths from the disease will occur globally in the next 25 years, with almost two third of cases arising in developing countries (WHO, 1999). Cancer is an abnormal growth of tissue which of its form commonly called as neoplasm. It can be treated by radiation therapy, chemotherapy, surgery, other therapy like immunotherapy; biological agents are routinely used in cancer treatment. Chemotherapy or chemotherapeutic agent is the medication used to destroy cancer cells. [4]

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Materials and Methods

A prospective study, cross-sectional study was conducted in the Department of Medical Oncology, Sri Ramachandra Medical Center, Sri Ramachandra University, Porur, Chennai, which is a tertiary care hospital. The patient belonged to the oncology unit of both private and government block were included. Prior permission was obtained from the department of oncology for conducting this study.

The data were collected from inpatient prescription records at the hospital in a specially designed data collection form. Each prescription was critically studied for the patient's demographic details such as patient's name, age, gender, date of consultation etc. Name of the drug, dose, dosage form, frequency, duration were noted. The drugs prescribed in each prescription were carefully noted and the following parameter was used to assess the rationality of prescriptions, (1) Segregation of prescription in age wise, (2) Categorization of drugs prescribed with respective to gender, (3) Therapeutic category, (4) Percentage of drugs prescribed from national list of essential mediatory.

Results and Discussion

A total of 328 cancer patients' prescription was studied. The age wise distribution of cancer patients is shown in Figure 1. The study revealed that majority of cancer cases was evident in the age groups between 55 to 65 years. The age wise distribution of the patient showed that there was higher incidence of cancer in this age group. The total incidence of the case constituted 30.7% of the total age group. The next susceptible age group of patient prone to cancer was found to be 45 to 55 years.

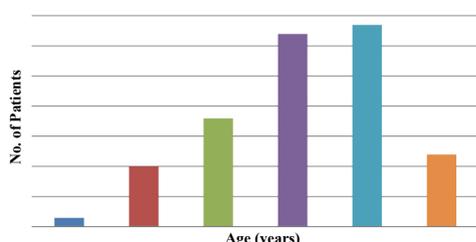


Figure 1: Age-wise distribution of cancer.

Several mechanisms have been proposed for explaining how vulnerability of cancer increases with age. [5-7] Aging makes an organism susceptible to cancer due to hormonal disturbance increase in number of loci of chronic proliferation, and the decline in the immune surveillance. Exposure to infectious agents or creation of pro-oncogenic tissue microenvironment with increasing age can promote the development of cancer. [8,9]

The study revealed that out of 328 patients, there were 179 female patients and 149 male patients. The greater prevalence of cancer in females can be because of the involvement of their reproductive system such as the ovarian cancer, breast cancer, and cervical cancer which occupy the major portion among all other forms of cancer. [10,11] These susceptible body parts cause greater incidence of cancer problems in females. [12,13]

Out of 179 female patients, the most affected age group was 46-55 years which constituted about 34.23% and the least affected

age group was 18-25 years which constituted only 0.74% of the total patients. Out of 179 female patients, breast cancer was found to be most prevalent which constitutes about 32.96% of the total cases. The next prevalent cancer was in ovary and stomach which constituted about 15.64% and 14.52% respectively. This observation is in accordance with Darshan et al. [14]

Out of 149 male patients, the most affected age group was found to be 56-65 years which constituted about 38.92% and the least affected age group was found to be 18-25 years which constituted only 1.96% of the total patients. Lung cancer was found to be most prevalent in males which constitute about 22.81% of the total cases. The next prevalent cancer was in stomach which constituted about 17.44%. Same sort of observation is reported by other authors. [15-18]

There were altogether 26 different types of cancer observed during the study period. The type of cancers observed with their corresponding number of patients is shown in Table 1. The cancers were found to be affecting every systems of the body revealing the non-specific nature of the disease.

Table 1: Various types of cancer in study patients.

S.No.	Types of Cancer	No. of Patients
1	External ear	1
2	Hypopharynx	1
3	Cheek	3
4	Carcinoma nasopharynx	3
5	Maxilla	3
6	Mouth	3
7	Periampullary	3
8	SQ cell CA RT root	3
9	Chronic carcinoma	4
10	Endometrium	4
11	Gall bladder	8
12	Cervix	9
13	Prostate	9
14	Tongue	10
15	Rectum	11
16	Gastric	11
17	Pancreas	13
18	NHL	13
19	Lymphatic lymphoma	15
20	Miscellaneous	17
21	Oesophagus	18
22	Colon	19
23	Stomach	26
24	Ovary	28
25	Lung	34
26	Breast cancer	59

The percentage of different classes of drugs prescribed in the cancer patients is presented in Figure 2. The majority of drugs prescribed was alkylating agents followed by antimetabolites, plant derivatives, cytotoxic antibiotics and glucocorticoids.

Out of 15 anti-cancer drugs mentioned in the National essential drug list by the WHO, 12 drugs (80%) were routinely prescribed to the patients for various cancer treatments. Cancer chemotherapy includes cytotoxic medicines accompanied by adjuvant and supplementing therapeutic measures. These additional medications other than the cytotoxic medicine are

for reducing the side effect seen with the cancer chemotherapy. Table 2 depicts the details of the supportive drugs used.

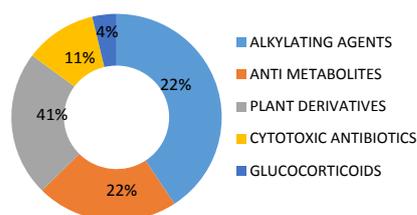


Figure 2: Classes of anticancer drugs prescribed.

Table 2: Adjuvant therapies in the management.		
S. No	Drug Category	No. of Patients Percentages
Anti -emetics		
1.	Emecet	70 7.61%
	Perinorm	30 3.26%
2.	Supplements therapy	
	FST/BCT	86 9.35%
3.	Steroid	
	Dexamethasone	108 11.75%
4.	Proton pump inhibitors	
	Pantaprazole	45 4.89%
	Rabenprazole	49 5.33%
5.	H2 Antagonists	
	Chlorpheniramine maleate	120 13.05%
	Palzen	81 8.81%
	Ranitidine	136 14.79%
6.	Rehydration therapy	
	Potassium chloride and magnesium sulphate	21 2.28%
7.	Analgesics	
	Paracetamol	77 8.37%
	Tramadol	11 1.19%
8.	Miscellaneous	41 4.46%

Conclusion

The present study concludes that prevalence of cancer increased with increase in age. The prevalence of cancer is more in females than males. Carcinoma of breast and cervix are common types, alkylating agents and antimetabolites are the mostly used anti-cancer drug. H₂ antagonists, steroids, anti-emetics, supplement therapy, analgesics, proton pump inhibitors and rehydration therapy are the adjuvant therapies given along with the anti-cancer drugs. 73% of the total anti-cancer drugs prescribed were in the National essential drug list.

Conflict of Interest

All authors disclose that there was no conflict of interest.

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