

# An Epidemiological Survey Conducted on Prevalence and Incidence of Different Types of Cancers in Radiotherapy Department, Government General Hospital, Andhra Pradesh: A Prospective Observational Study

Subrahmanyam SN<sup>1\*</sup>, Raju GV<sup>1</sup>, Lakshmi DT<sup>2</sup> and Kumar GV<sup>3</sup>

<sup>1</sup>Department of Pharmacy Practice, Koringa College of Pharmacy, Kakinada, A.P, India

<sup>2</sup>Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Guntur, A.P, India

<sup>3</sup>Department of Pharmaceutical Chemistry, Koringa College of Pharmacy, Kakinada, A.P, India

## Abstract

**Objective:** There is no huge number of studies conducted on epidemiology of cancers this main point is considered for the conductance of our study and this helps to people for the further conductance of studies and gives brief idea about prevalence and predominance of cancers. To rule out leading cause of cancers. To evaluate the types of cancers are more predominant was explained based on age, area, sex in both males and females.

**Methodology:** A Non experimental prospective observational study was conducted in radiotherapy department, government general hospital, Andhra Pradesh. The study was carried out between December 2016 and May 2017. A Non-experimental prospective observational study. A total 361 patients were included in the study and based on age, sex, urban or rural and type of cancer study was conducted.

**Results and key findings:** According to the data the patients with age group of 31 to 40 were highly affected and age group between 0 to 10 were less affected. Gender wise distribution of patients affected with cancer a total of 361 patients was diagnosed with different types of cancers; Out of which 235 (65%) were females and 126 (34%) were males. Area wise distribution of patients with cancer; Out of 361 patients 143 (40%) belongs to the Urban area, whereas 218 (60%) belongs to Rural area. Type wise distribution of cancers most of female suffers from cervix 80 (22.26%) and breast cancer 48 (13.29%) whereas in males suffer from head and neck cancer 74 (23.41%) and stomach and leukemia's.

**Conclusion:** Our study concluded the incidence of the cervix and breast is more in females whereas in the male's head and neck, stomach and leukemia's was most predominant when compared to all other cancers. Age group between 31 to 40 was highly affected and age group between 0 to 10 was less affected. The people belongs to rural with about 60% and whereas urban only 40%.

**Keywords:** Breast; Cancer; Colorectal; Lymphoma; Stomach

## Introduction

### Aim and Objectives

**Aim:** To evaluate the prevalence and incidence of different types of cancer in radiotherapy department, government general hospital, Guntur, Andhra Pradesh.

**Objective:** There is no huge number of studies conducted [1,2] on epidemiology of cancers this main point is considered for the conductance of our study and this helps to people for the further conductance of studies and gives brief idea about prevalence and predominance of cancers. To rule out leading site of cancers. To evaluate the types of cancers are more predominant was explained based on age, area, gender in both males and females [3].

**Study site:** A non-experimental prospective observational study was conducted in radiotherapy department, government general hospital, Andhra Pradesh.

**Study duration:** The study was carried out between December 2016 and May 2017.

**Study design:** A non -experimental prospective observational study.

**Plan of work:** The work is planned to carry out as follows:

1. To include all types of cancer patients.
2. To design a patient data collection form.

3. To collect all the data required for the study.

4. To counsel the patients regarding the usage and effects of medications.

## Methodology

### Study site

A non-experimental prospective observational study was conducted on cancer patients in radiotherapy department, government general hospital, Andhra Pradesh [4].

**Study duration:** The study was carried out between December 2016 and May 2017.

**\*Corresponding author:** Dr. S Naga Subrahmanyam, Assistant Professor Department of Pharmacy Practice, Koringa College of Pharmacy, korangi, Kakinada, A.P, India, Tel: 9908991161; E-mail: [subrahmanyamsatupati@gmail.com](mailto:subrahmanyamsatupati@gmail.com)

**Received** October 22, 2018; **Accepted** November 25, 2018; **Published** December 07, 2018

**Citation:** Subrahmanyam SN, Raju GV, Lakshmi DT, Kumar GV (2018) An Epidemiological Survey Conducted on Prevalence and Incidence of Different Types of Cancers in Radiotherapy Department, Government General Hospital, Andhra Pradesh: A Prospective Observational Study. J Pharma Care Health Sys 5: 197. doi:10.4172/2376-0419.1000197

**Copyright:** © 2018 Subrahmanyam SN, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Inclusion criteria:**

1. A patient who suffers from particular one type of cancers but not metastatic cancer patients because cancers which are included in the study may occurs from other site of cancers; for example lung cancer may occur due to cervix cancer because metastasis leads due to spread of cancers to the lungs as secondary cancer [5].
2. Occurrence of cancers are affected by age, gender, area and which helps us to evaluate which age, gender and area people are most affected to particular type of cancers.
3. Consented males and females above age 18 years are included in the study because most of the patients comes to radiotherapy department are above 21 years and mostly affected [6] people are above 30 years.
4. Consented males and females above 18 years are having social habits like alcohol and smoking [7] this will help us to assess causes of the cancers and the other type of causes like oral sex is also one of the most important for occurrence of squamous carcinoma of head and neck. So in order to rule out all these especially males and females above 18 are included [8].

**Exclusion criteria:**

1. Patients who suffered from complications of cancers.
2. Patients with head and neck cancer under 18 years are excluded.
3. Female patients with pregnancy are excluded.
4. Patients with severe heart disease and lung disease are excluded [9].

**Results**

Figure 1 is based on age wise distribution of cancer this clearly shows that the people of age groups 31-40 is highly affected by cancers i.e. 113% and second most affected people are in the age group of 51-60(80%) and least affected people were in the age group of 0-20 (20%).

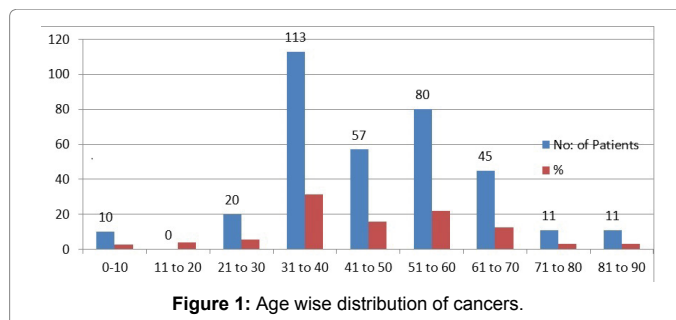
Table 1 describes that the Age wise distribution of patients with cancer is based according to the data of the patients where the age group between 31-40 is highly affected and age group of patient between 0-10 is less affected.

Figure 2 is based on gender wise distribution of patients affected with cancer. This pie diagram clearly depicts that females occupied first place with about 65% whereas males are only just 34%.

It describes that the gender wise distribution of patients affected with cancer a total of 361 patients was diagnosed with different types of cancers: out of which 235 (65%) are females and 126 (34%) are males and it is shown in Table 2.

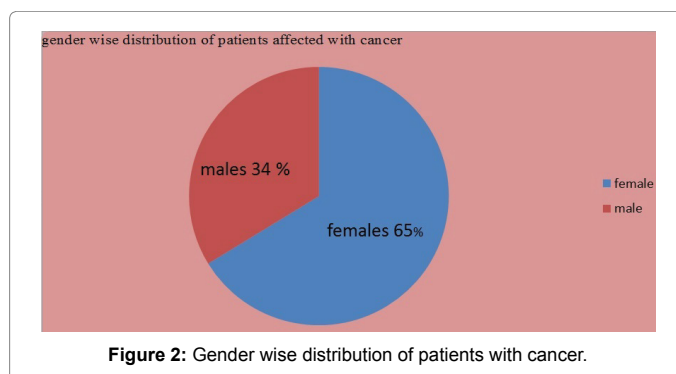
The bar diagram as shown in Figure 3 is based on the type of cancers and on which type of cancers are predominant in both males and females. The highest percentage of cancer are recorded by head and neck cancer with overall percentage of 115 and second place occupied by cervix cancer with 80%.

Table 3 describes type wise distribution of cancers most of female suffers from cervix 80 (22.26%) and breast cancer 48 (13.29%) whereas in males suffer from head and neck cancer 74 (23.41%) and stomach and leukemia's.



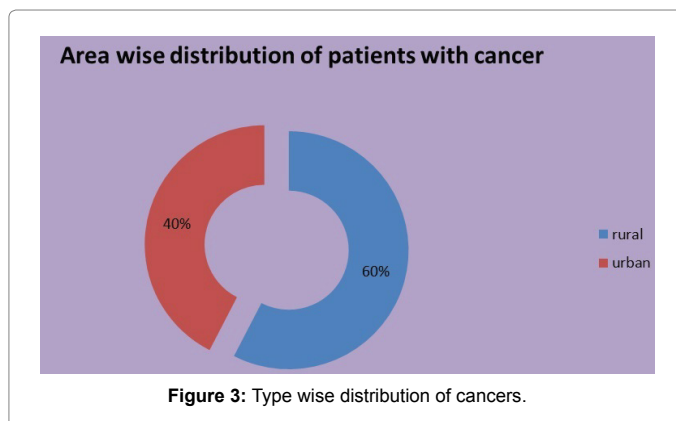
Age	No. of Patients	Percentage (%)
0-10	10	2.77
11 to 20	144	3.87
21 to 30	20	5.54
31 to 40	113	31.30
41 to 50	57	15.78
51 to 60	80	22.16
61 to 70	45	12.46
71 to 80	11	3.04
81 to 90	11	3.04

Table 1: Describes the Age wise distribution of patients.



Gender	Number	Percentage
Female	235	65%
Male	126	34%

Table 2: Describes the gender wise distribution of patients affected with cancer.



The diagram shown in Figure 4 is based on the affected cancers patients belong to which area: urban or rural areas. This illustrates that

S. No	Type of cancer	Number of patients	Percentage (%)
1	Myeloid leukemia	11	3.04
2	Breast cancer	48	13.29
3	Osteosarcoma	1	0.277
4	Chondrosarcoma	1	0.277
5	Hepatocellular carcinoma	7	1.93
6	Vault	9	2.49
7	Choriocarcinoma	3	0.83
8	Pancreas	4	1.10
9	Gallbladder	3	0.83
10	Vulva	4	1.10
11	Stomach	9	2.49
12	Esophagus	1	0.277
13	Bladder	7	1.93
14	Periampullary	4	1.10
15	Prostate	2	0.55
16	Pennis	6	1.66
17	Lymphomas	9	2.49
18	Ovary	19	5.26
19	GBM	4	1.10
20	Colon	21	5.81
21	Lung	21	5.81
22	Multiple myeloma	3	0.83
23	Cervix	80	22.16
24	Thyroid	11	3.04
25	Tongue	12	3.32
26	Parotid	2	0.55
27	Supraglottis	12	3.32
28	Nasopharynx	3	0.83
29	Lower lip	1	0.277
30	Oral cavity	3	0.83
31	Oropharynx	1	0.277
32	Post cricoids	11	3.04
33	Vocal cord	2	0.55
34	Tonsils	1	0.277
35	Angle of mouth	1	0.277
36	Hypopharynx	3	0.83
37	MUO neck	3	0.83
38	Secondary neck	2	0.55
39	Hard palate	3	0.83
40	Soft palate	1	0.277
41	Recurrent buccal mucosa	2	0.55
42	Buccal mucosa	4	1.10
43	Alveoli	1	0.277
44	Larynx	1	0.277
45	Cheek	1	0.277
46	RMT	2	0.55
47	Glottis	1	0.277

Table 3: Type wise distribution of cancers.

most of people belongs to rural with about 60% and whereas urban only 40%. This helps us to rule out their economic status, social habits and less nutrients diet are might be the reasons for the occurrence of cancers.

The area wise distribution of patients with cancer is shown in Table 4, where out of 361 patients 143 (40%) belongs to the urban area and 218 (60%) belongs to rural area.

## Discussion

T Cherian conducted a study like increasing cancer incidence in a

tertiary care hospital [10] in a developing country, India at Department of Pathology, Lakeshore Hospital, Nettoor, Kochi, Kerala, India [11]. The study objective was Cancer is a major health problem in many countries including India. Since cancer registries are incomplete in India, only a few epidemiological studies have been done so far. The objective was to determine the leading causes of cancer in a tertiary care hospital and compare the incidences of different types of cancer with the incidences in India and developed countries [12]. An epidemiological study was done to collect data from pathology records of 1003 cancer cases during 6-month period in the year 2010. The data were collected in a computer and the data was utilized to make tables and histograms. In the 1003 cases, the leading cancer site was breast, followed by colon and rectum, lymph node and stomach. The leading cancer site for men was colon and rectum and for women was breast. Cancer incidence is now low in India, a developing country, compared to developed western countries [13]. However, some cancers like breast, colon and rectum cancers are increasing every year. The findings of this study support that cancer incidence is increasing in India and more epidemiological studies are needed.

Similarly to the above mentioned study evaluate the prevalence of different types of cancer in government general hospital, Andhra Pradesh. As above mentioned [14] that there is no huge number of studies conducted on epidemiology of cancers this main point is considered for the conductance of our study. To evaluate the types of cancers are more predominant based on age, area, gender in both males and females. A non-experimental prospective observational study was conducted in both government general hospital, Guntur, Andhra Pradesh. The study was carried out between December 2016 and May 2017. A non-experimental prospective observational study where total 361 patients were included in the study and based on age, gender, urban or rural and type of cancer study [15] was conducted. According to the data the patients with age group between 31-40 were highly affected and age group between 0-10 was less affected. Gender wise distribution of patients affected with cancer a total of 361 patients was diagnosed with different types of cancers, out of which 235 (65%) were females and 126 (34%) were males. Area wise (Figure 4) distribution of patients with cancer, out of 361 patients 143 (40%) belongs to the urban area, whereas 218 (60%) belongs to Rural area [16]. Type wise (Table 3) distribution of cancers most of female suffers from cervix 80 (22.26%) and breast cancer 48 (13.29%) whereas in males suffer from head and

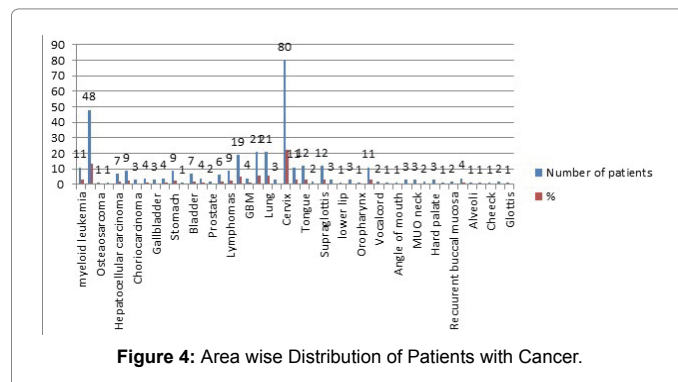


Figure 4: Area wise Distribution of Patients with Cancer.

Area Wise Distribution of Patients with Cancer		
Area	Number	Percentage (%)
Rural	218	60%
Urban	143	40%

Table 4: Describes the area wise distribution of patients with cancer.

neck cancer 74 (23.41%) and stomach and leukemia's, whereas in above mentioned study males are mostly affected with cancers like colon, rectum and females are affected with breast. In our study males are mostly affected with head and neck cancer and females are affected with cervix. Even though most are awareness creating regarding social habits like alcohol and smoking can cause dangerous cancers and can threaten our lives. Whereas in cervix cancers a lot of advancement taken place like cervix vaccination but most of the people even don't know about vaccine especially in rural areas. So the incidence of cervix cancer still increases. Our study concluded that the incidence and prevalence of cancer is more among females is cervix whereas males in head and neck cancers [17]. The findings of this study support that cancer incidence is increasing in India and more epidemiological studies are needed. In the same way people education is also very important to reduce the prevalence and incidence of cancers.

## Conclusion

Our study concluded the incidence of the cervix and breast is more in females, whereas in the male's head and neck, stomach and leukemia's was most predominant when compared to all other cancers. Age group between 31-40 was highly affected and age group between 0-10 was less affected. The people belongs to rural with about 60% and whereas urban only 40%.

## References

1. Annual Report 2009-10. Thiruvananthapuram, Kerala: Regional Cancer Center pp: 40-43.
2. Cancer in Australia 2010: An Overview Cancer Series No. 60, Canberra: AIHW.
3. <http://www.SEER.cancer.gov/statfacts/html.nhl.html>
4. <http://www2.le.ac.uk/offices/marketing/press/university-of-leicester-in-the-media-may-2012>
5. Dikshit R (2012) Cancer mortality in India: A nationally representative survey. *Lancet* 379: 1807-1816.
6. Ferlay J (2010) Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer* 127: 2893-917.
7. Gadgil A (2012) Effect of a comprehensive breast care on breast cancer outcomes: A community hospital based study from Mumbai, India. *Asian Pac J Cancer Prev* 13: 1105-1109.
8. He J (2005) Major causes of death among men and women in China. *N Engl J Med* 353: 1124-1134.
9. Maiti P (2012) Patterns of cancer occurrence in different regions of West Bengal- A hospital based study. *J Indian Med Assoc* 110: 445-448.
10. Mohandas K (2011) Colorectal cancer in India: Controversies, enigmas and primary prevention. *Indian J Gastroenterol* 30: 3-6.
11. Nair M (1993) Overall survival from breast cancer in Kerala, India, in relation to menstrual, reproductive and clinical factors. *Cancer* 71: 1791-1796.
12. National Cancer Registry Program. Development of an atlas of cancer in India. First all India report 2001-2002. Vol. IP 193-270.
13. Verdecchia A (2002) A comparative analysis of cancer prevalence in cancer registry areas of France, Italy and Spain. *Ann Oncol* 13: 1128-1139.
14. <http://www.who.int/whosis>
15. [www.globocan.iarc.fr](http://www.globocan.iarc.fr)
16. Yeole B (2008) Trends in the incidence of non-Hodgkin's lymphoma in India. *Asian Pac J Cancer Prev* 9: 433-436.
17. Zhao (2010) Cancer trends in China. *Jpn J Clin Oncol* 40: 281-285.