

Profile of Cancer Cases: A Hospital Based Retrospective Study

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Abstract

Background: Cancer, which is defined as abnormal growth of cell, can affect any tissue or organ of body. Cancer is one of the major public health problems worldwide. Prevalence and pattern of cancer is known to vary from region to region. Epidemiological information on cancer including the pattern is an important basis for determining the priorities for cancer control in any population group. These days the world is heading towards various types of non-communicable diseases, which are also known as modern epidemics. Among these modern epidemics cancer is the second commonest cause of mortality in developed countries. In the developing countries cancer is one among the ten commonest cause of mortality. *Objective:* Present work is an attempt to study magnitude, profile and some epidemiological aspects in relation to cancer cases at a tertiary care level teaching hospital. *Material and Methods:* The present hospital based retrospective study was conducted for the period 1st May 2016 to 31st May 2016. Cancer cases diagnosed by all methods or treated during this period were identified from the inpatient registers maintained by the Medical Records Department. All records were studied and analyzed. A total of 422 patients were treated during the period of study. A semi structured Performa was used to collect data such as age, sex, place of residence, type of cancers and treatment given. The data collected were entered in to MS-Excel sheets and analysis was carried out using software spss 20. The information obtained was tabulated and presented in percentages, and numbers. Significance was calculated using chisquare test. *Results:* A total of 422 cancer patients were treated during the May 1st 2016 to May 31st 2016. Among them, 237(56.2%) were females and 185(43.8%) were males. The study revealed that Breast cancer (74 cases, 17.5%), Lung cancer (17 cases, 4%), Cervical cancer (18 cases, 4.3%), Oral cancer (38 cases, 9%) and 208 cases (49.3%) constitute remaining other cancers. Age and sex distribution revealed maximum number of cancer patients were present between 61 to 70 years (22.3%). In males, majority of cases were present in 61-70 Year's age group (30.81%) and females majority of cases were seen in 41-50 year age group (23.6%). Study sample revealed 46.9% cancer cases (198 patients) residing in urban areas and 53.1% cases (224 patients) were from rural areas. The main methods of cancer treatment were surgery, chemotherapy and radiotherapy, used alone or in combination. *Conclusion:* Tobacco and alcohol related cancers predominated in males. In females, breast cancer predominated over breast cancer. Human behavior is a major determinant in the successful control of cancer. Understanding cancer magnitude, risk and trends will be of help in cancer control.

Keywords: Cancer Profile; Tertiary Care Centre; Breast Cancer; Lung Cancer.

Introduction

One of the most dreaded non-communicable

diseases is cancer, which has become an important contributor to the global burden of diseases [1].

Cancer is a disease, in which cells of abnormal in nature can proliferate rapidly without control and are able to occupy other tissues. There are many routes through which abnormal Cancer cells can spread to other parts of the body [2].

According to the World Cancer Report (WCR 2003), given by the International Agency for Research

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on Cancers (IARC), the burden of cancer doubled globally between 1975 and 2000, and 10 million people are diagnosed with cancer annually worldwide. Whereas 2008 report estimates that there were 12 million new cancers diagnosed worldwide in 2009 and more than seven million people will die of this disease. The projected numbers for the year 2030 are 20-30 million new diagnoses and 13-17 million deaths [1,2].

The burden of cancer is growing globally and is one of the most leading causes of death. In developed countries cancer is the second leading cause of death accounting for 21% of mortality by other causes and in developing countries it ranks third, accounting for 9.5% of all deaths [3].

The global community can expect an increase of incidence of about 1% each year, with larger increase in China, Russia and India [4]. However, there is a clear message of hope: Although cancer is a devastating disease but it is largely preventable. If we have the adequate data about cancer patients, then by applying appropriate measures, a great impact on reducing the global cancer burden can be achieved. And one of the instruments for data collection of cancer patients is their registration [5].

Effective planning for cancer control intervention depends mostly on information on cancer patterns. Limited published information is available on pattern of cancer for the state of Karnataka, India. The present study was an attempt to explore the pattern and trend of cancer in one district of Karnataka. Epidemiological observations indicate that environment and lifestyle are the major determinants of the geographical patterns of cancer. To study the profile of different cancers in a particular cancer belt helps to know the exact incidence of different cancers in that region and their likely etiology and can have a baseline to plan and access control measures.

With this background in mind present work

carried out to study magnitude, pattern and some epidemiological aspects in relation to cancer cases at a tertiary care level teaching hospital in Ballari, Karnataka.

Materials and Methods

The present hospital based retrospective study was conducted for the period 1st to 31st May 2016, after approval from institutional ethical committee board. Cancer cases diagnosed by all methods or treated during this period were identified from the inpatient registers maintained by the Medical Records Department.

All records were studied and analyzed. A total of 422 patients were treated during the period of study. A semi structured Performa was used to collect data such as age, sex, place of residence, type of cancers and treatment given. We also assessed all the patients basic personal, family & socioeconomic data which including data regarding smoking, alcohol consumption and tobacco chewing. For women, gynecological and obstetric data was also collected.

The data collected were entered in to MS-Excel sheets and analysis was carried out using software spss 20. The information obtained was tabulated and presented in percentages, and numbers. Significance was calculated using chi square test and p value of less than 0.05 is considered to be significant.

Results

A total of 422 records were analyzed during the study period of one month. Among them 56.16% (237 patients) were females and 43.84% (185 patients) were males. Majority of the patients were illiterates, married Hindu religion and most of them from rural place (Table 1).

Table 1: Socio demographic profile of the study participants

Variables	Male (%) (n=185)	Female (%) (n=237)	Total (%) (n=422)
Age group			
<30	7(3.78)	14(5.91)	21(4.97)
31-40	17(9.2)	20(8.44)	37(8.77)
41-50	18(9.72)	44(18.57)	62(14.69)
51-60	28(15.13)	56(23.63)	84(19.91)
61-70	42(23.24)	51(21.52)	94(22.27)
71-80	57(30.81)	38(16.03)	95(22.51)
more than80	15(8.11)	14(5.91)	29(6.87)
Education			
Literate	2(1.08)	4(1.69)	6(1.42)
Illiterate	183(98.92)	233(98.31)	416(98.58)

Religion			
Hindu	160(86.49)	211(89.03)	371(87.91)
Muslim	25(13.51)	26(10.97)	51(12.09)
Marital status			
Married	175(94.59)	224(94.52)	399(94.55)
Unmarried	10(5.40)	13(5.49)	23(5.45)
Place of residence			
Urban	79(42.70)	119(50.22)	198(46.92)
Rural	106(57.3)	118(49.79)	224(53.09)

Table 2: Sex wise distribution of cancer cases

Type of cancer	Male		Sex		Female		Total	
	Male	%	Female	%	Total	Total	%	
Cervical cancer	0	0	18	7.6	18	18	4.3	
Breast cancer	0	0	74	31.2	74	74	17.5	
Lung cancer	12	6.5	5	2.1	17	17	4	
Oral cancer	22	11.9	16	6.8	38	38	9	
GIT cancer	29	15.7	21	8.9	50	50	11.8	
Female genital track	0	0	10	4.2	10	10	2.4	
Male genital track	7	3.8	0	0	7	7	1.7	
Others	115	62.2	93	39.2	208	208	49.3	
Total	185	100	237	100	422	422	100	

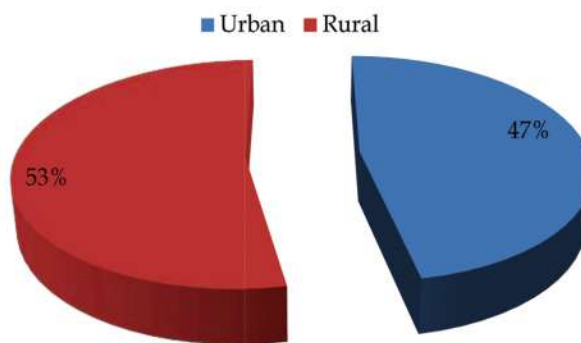
Table 3: Age wise distribution of cancer cases

Type of cancer	Age Group(yrs)												Total	%
	>30	%	31-40	%	41-50	%	51-60	%	61-70	%	>70	%		
Cervical cancer	1	2.7	2	3.2	3	3.6	5	5.3	6	6.3	1	3.4	18	4.3
Breast cancer	9	30.5	19	30.6	17	20.2	15	16	12	12.6	2	6.9	74	18
Lung cancer	0	0	3	4.8	1	1.2	4	4.3	6	6.3	3	10	17	4
Oral cancer	2	5.4	4	6.5	9	10.7	13	13.8	7	7.4	3	10	38	9
GIT cancer	6	16.2	8	12.9	7	8.3	12	12.8	15	15.8	2	6.9	50	12
Female genital track	1	2.7	2	3.2	3	3.6	4	4.3	0	0	0	0	10	2.4
Male genital track	0	0	1	1.6	0	0	2	2.1	3	3.2	1	3.4	7	1.7
Others	39	67.2	23	37.1	44	52.4	39	41.5	46	48.4	17	59	208	49
Total	58	100	62	100	84	100	94	100	95	100	29	100	422	100

Table 2 shows that the most common cancers among females were breast cancer, which constituted 39.2% of the total number of cancer cases followed by other cancers. In males the common cancers were GIT cancers, oral cancers, lung cancer and others. Which constituted 62.2% of the total number of cancer cases followed by other cancers. Others include hypopharynx cancer of left pyriform fossa, hepatocellular carcinoma and cancer of urinary bladder, carcinoma of oesophagus. In both the sexes, the most common site among all gastrointestinal malignancies was the oesophagus followed by gastric cancer.

Table 3 shows that maximum frequency was observed in 61-70 year age group in both sexes. However, it is worth while to take a note that from 31 years and above age group onwards cervix and breast predominate the leading sites in females. In 31 and above age group oral cavity, GIT and lung were the leading cancer sites in males.

Graph 1 shows that majority of these patients belong to low socioeconomic group with rural



Graph 1: Distribution of study participants according to place of residence

Background. Hence maximum number of cancer patients (53%) were from rural background..

Table 4 shows that majority of the cancer cases present in Hindu religion (87.9%), and it was significant $\chi^2 = 46.104 (P=0.000)$ when compared to other religions. Female patients were more compared to males $\chi^2=111.72 (P=0.000)$.

Table 4: Risk factor associated with occurrence of cancer

Variables	Type of cancer									%
	Cervical	Breast	Lung	Oral	GIT	Female genital track	Male genital track	Others	Total	
	No	No	No	No	No	No	No	No	No	
Religion										
Hindu	18	68	14	34	43	8	6	180	371	87.9
Muslim	0	6	3	4	7	2	1	28	50	12.1
Total	18	74	17	38	50	10	7	208	422	100
	$\chi^2 = 46.104$	$P=0.000$								
Sex										
Male	0	0	12	22	29	0	7	115	185	43.8
Female	18	74	5	16	21	10	0	93	237	56.2
Total	18	74	17	38	50	10	7	208	422	100
	$\chi^2=111.725$	$P=0.000$								
Place of residence										
Urban	5	42	11	17	17	7	5	94	198	46.9
Rural	13	32	6	21	33	3	2	114	224	53.1
Total	18	74	17	38	50	10	7	208	422	100
	$\chi^2=15.183$	$P=0.034$								
Smoking										
Yes	0	0	5	6	5	1	1	31	49	11.6
NO	18	74	12	32	45	9	6	177	373	88.4
Total	18	74	17	38	50	10	7	208	422	100
	$\chi^2=20.378$	$P=0.005$								
Tobacco chewing										
Yes	1	0	0	15	1	0	1	11	29	6.9
NO	17	74	17	23	49	10	6	197	393	93.1
Total	18	74	17	38	50	10	7	208	422	100
	$\chi^2=73.882$	$P=0.000$								

Discussion

The pattern of cancers differs in various part of same country. A general way of assessing the dimension of the cancer problem in a given cancer hospital/centre is the number of cancer diagnoses per year in the concerned Hospital. It is observed that cancers are increasingly seen in both genders and all the age groups due to a complex interaction of various risk factors. Cancer registration helps the public health professionals to understand the dynamics of cancer incidence for the formulation of future strategies.

The present results were in contradiction to that of study done in Aizwal [6] which showed that cancers were more prevalent in males as compared to females and similar to the study done in Chandigarh [5].

The patient's age ranged from 3 to 85 years with the mean age of 50.7±16.06 and almost 2/3rd occurred in the age group of 41-70 years (64.69%) and maximum frequency at 61-70 years. Similar results by Binu VS

et al [1] Puri S et al [3] and Jayant DD et al [7] Increase in the life expectancy is one of the major factors for an increased incidence of cancer.

In the present study, almost all the patients except 6 cases were illiterates, 94.55 % cases were reported as married. More than 85% cases were from Hindu religion as per the records and more than half of them from rural place. Study by Puri S et al [3] showed that 42.6 % were illiterates where as others were literates and 63.6% were from Hindu religion. 15.8% cases reported as unmarried. Jayant DD⁷ reported that in their study 74.59% of the cancer cases in the present study were from rural area.

Yadav S.P, et al [8] studied cancer patients in New Delhi in 2007 in different religion people. 81% of total study population belonged to Hindus, 7.5% belonged to muslims.

Higginbotham, John C et al [9] at Mississippi Cancer Registry, did not find difference, but the rural and urban age adjusted cancer incidence and mortality revealed, for the vast majority of results,

there was a significant difference between rural and urban residents for stage of disease at initial diagnosis.

In the current study the most common cancer to be others in both females (39.2%) as well as males (62.2%). Followed by Breast (31.2%), GIT (8.9%), cervical (7.6%) in females; whereas next sequence of cancers in males were GIT (15.7%), Oral (11.9%), and lung (6.5%).

Sambasivaiah K et.al [10], studied Cancer patterns in Andhra Pradesh, which revealed that, most common cancer in their study to be lung cancer (9.9%) followed by Cervix (9.4%), Breast (9.3%), Oral (8.1%). Another study showed that, the most common cancers among females were cervical carcinomas, constituted 32.10% followed by cancers of breast and in males; it was oral cavity cancers, lung cancers, GIT cancer and others [7].

Malik tariq rasool et al [11], in their study of cancer in Kashmir, India: burden and pattern of disease, showed that most common cancer in both males and females was oesophagus, and when they analysed separately females were predominantly affected with the oesophagus cancer where as males had lung cancer.

In a study by S P Khandeka about oral cancer in Nagpur showed that most of the patients were used for tobacco chewing (71.3%) or tobacco smoking (63.3%) and among them 47.5% were classified as grade 3 & 4 of oral cancer [12].

M. Krishnan nair et al [13] studied Cancer: Current scenario, intervention strategies and projections for 2015, and stated that 17.6% of males had oral cancer incidence followed by pharynx (11.6%), lung (9.8%), GIT (9.7%). And most incident cancer in females was cervical cancer (57.4%), followed by breast (39.7%) and oral cavity (9.7%) in the age group of 35-64 years. And leading cancer sites in Karnataka state are stomach and cervix, which nearly similar as in our study.

When there is no proper records like population based registries or cancer registries, and where incidence and mortality figures are not available, studies like the present one may provide useful leads for health planning and future research.

As per the proverb, "prevention is better than cure" the prevention strategies are crucial in cancer eradication. This approach offers a great public health concern and inexpensive long term method of cancer control. National Cancer Control Programme (started in 1975- 1976 in India) lead to the development of Regional Cancer Centers (RCCs), a number of

oncology wings in Medical Colleges; supported the purchase of teletherapy machines the education should focus on harmful effects of tobacco and discourage its use. Besides, we should create awareness among public about physical activities, avoiding obesities, healthy dietary practices, reducing occupational and environmental exposures, reducing alcohol uses, immunization against hepatitis B virus and safe sexual practices for avoiding cancer genesis [14]. The same approach should be included in adult education programme [9].

Conclusion

Tobacco and alcohol related cancers predominated in males. In females cervical cancer was predominant over breast cancer. This is only a hospital records based study. However this study provides leads for further etiological research; identify cancers that are more common in rural area and helps to take-up cancer preventive measures and screening programmers in early detection of cancer. Understanding cancer magnitude, risk and trends will be of help in cancer control.

Limitations

We have taken the patients details (study participants) from medical record section, as the case sheets were not properly maintained, we could not find out much of data regarding the risk factor associations. Case sheets were incomplete entered.

Recommendations

Study should be in prospective manner or population based to find out exact incidence rates among the patients.

Source of support: NIL

Conflicts of interest: None declared

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