Clinico-Epidemiological Patterns of Different Cancers in a Tertiary Care Cancer Hospital, Jabalpur, Madhya Pradesh - A Descriptive Cross-Sectional Study from Central India

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ABSTRACT

BACKGROUND

In India, around 2.0 – 2.5 million people are living with one or another kind of cancer menace and above 7 – 8 lakhs new cases added every year to the existing burden.[1] Most of the data are from developed countries where the social - demographic and epidemiological scenarios are different from developing countries. Hence it is more than essential to study the clinical and epidemiological characteristics of various cancers patients attending Cancer Hospital in NCBMCH Jabalpur Madhya Pradesh.

METHODS

A descriptive cross-sectional, hospital-based study was conducted in NSCB MCH Jabalpur among 340 cancer patients attending the outpatient department of the cancer hospital. A predesigned, semi-structured questionnaire was used to assess the socio-demographic profile and burden on caregivers of cancer patients.

RESULTS

The overall most common site of cancer was Oral cancer (26.4 %), followed by colorectal cancers. The most common substance abuse was tobacco chewing (27.3 %). Most of the individuals were in the age group 45-59 (39.4 %) followed by age group 60 and above (30.5 %). Among males, maximum patients had oral cancer (33.7 %) and among females (carcinoma cervix (39.9 %).

CONCLUSIONS

Cancer was found to be more prevalent among rural males and the mean age of presentation 50.85 ± 13. 5 years.

KEYWORDS

Tertiary Care Hospital, Cancer, Clinic-Epidemiological.

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BACKGROUND

Cancer is a group of diseases characterized by involvement of abnormal cell growth with the potential to invade or spread to the adjacent and distant parts of the body.[2] Worldwide Cancer is considered as one of the leading causes of morbidity and mortality, with approximately 14 million new cases in 2012. Cancer is the second leading cause of death globally and was responsible for 8.8 million deaths in 2015. Cancer leads to about 1 in every 6 deaths worldwide. Worldwide, an approximate estimation about the cancer deaths shows that 10 million people are diagnosed with cancer annually and more than 6 million dies of the disease every year; currently, over 22 million people in the world are cancer patients. It is assumed that the cancer burden in India will rise from nearly one million new cases in 2012 to over 1.5 million i.e. 1,569,196 by 2035.[1] Breast, uterine cervix, and oral cavity are three most commonly occurring cancers in India. Together they account for approximately 34 % of all cancers, and hence are a public health priority in India.[3] The upward trend in deaths resulting from cancer is a public health concern and a problem that needs to be addressed.[4] In India, the National Program for Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), program which is also funded through the National Health Mission, began with screening and early diagnosis, through an opportunistic screening approach at the level of the Community Health Centre and the District Hospital, with treatment being provided at the Regional Cancer Care Centre or tertiary centers like medical colleges.

All communities are burdened with cancer, but there are marked regional differences. To enhance understanding regarding clinical and epidemiological factors it is more than essential to carry out descriptive study of cancer. The lack of data regarding cancer patients within the context of Madhya Pradesh may result in a significant gap in our understanding of this population. To the knowledge of the present researcher, in Jabalpur no previous research has explicitly examined. Given the seriousness of its impact, present study Clinicoepidemiological patterns of different cancers in tertiary care Cancer Hospital, Jabalpur Madhya Pradesh, undertaken.

METHODS

A descriptive cross-sectional study was conducted in the Outpatient Department of Cancer Hospital, Jabalpur, Allied Hospital of Netaji Subhash Chandra Bose (NSCB) Medical College Jabalpur (M.P.) which is a tertiary care hospital from April 2018 to March 2019 among 340 cancer patients attending the outpatient department of oncology.

Inclusion Criteria

1. Cancer patients attending of Cancer Hospital, Jabalpur, those diagnosed with cancer for >1 month.
2. Patients aged 18 years or above.
3. Cancer patients accompanied by a caregiver.

Exclusion Criteria

1. Terminally ill cancer patients.
2. The patients who did not give consent.

Sample Size Calculation

The estimated sample size was calculated according to the formula-

$n = Z2pq/l2$

Where,
Z= confidence interval,
P (%) = prevalence cancer patients,
q (%) = 100-p (%), and l = allowable error.

By taking a fixed prevalence of cancer patients as 28 %, (taken on the basis % attending cancer OPD to the total patient OPD for the hospital) with the absolute error (l) as 5 % and Z as 1.96 for 95 % confidence interval, the sample size was calculated to be 309. By adding 10 % non-respondents, the final sample size came out to be 339, which was rounded off to 340.

Sampling Technique

A convenience sample of cancer patients was taken 340 who fulfilled the inclusion criteria of the study, had attended the outpatient department of the Cancer hospital, Jabalpur within the study period from April 2018 to March 2019. 340 caregivers accompanied the cancer patients who fulfilled the inclusion criteria of the study were included in the study.

Study Tool and Data Collection Techniques

Technique for data collection was face to face interviews and record reviews. A predesigned, semi-structured questionnaire was used to assess the socio-demographic profile and burden on caregivers of cancer patients. Study Variables such as Age, Gender, Religion, Area of residence, Level of education, socioeconomic status, type of family, and presence of comorbid physical illness included in study instrument.

Statistical Analysis

Data obtained was coded and entered using Microsoft office excels 2007. Collected data were checked for its completeness and correctness before analysis. Data were finally tabulated and analyzed using statistical software called SPSS 20. Descriptive analyses were reported as means with standard deviation and proportions.

Ethical Consideration

Ethical clearance was taken from the Institutional Ethics Committee Prior to the conduction of the study. Permission was also obtained from the head of the Department of Oncology, Cancer Hospital Jabalpur (M.P.). Written informed consent was obtained from all the participants who volunteered for the study. Oral consent was obtained from each patient after explaining the purpose of the study.

RESULTS

In the present study out of 340 cancer patients, 69.7 % were Males and 30.3 % were females by gender. Most of the individuals were in the age group 45-59 (39.4 %) followed by age group 60 and above (30.5 %). The mean age of cancer patients was found to be 50.85 ±13. 5 years. 70 % were from the rural area and 30 % were from an urban area. Most of the patients were married (85 %) followed by unmarried (7.3 %). Overall, the most common site of cancer was Oral cancer (26.4 %), followed by colorectal cancers (16.3 %) and carcinoma cervix (11.8 %). Among males, maximum patients had oral cancer (33.7 %) followed by colorectal cancer (22 %). While among females most common cancer was carcinoma cervix (39.9 %) followed by breast carcinoma (17.7 %) Table 2.

Characteristics	Frequency	%
Gender		
Male	237	69.70
Female	103	30.30
Age (in years)		
18-29	31	9.2
30-44	71	20.9
45-59	134	39.40
60 and above	104	30.50
Mean age of cancer Patients (50.85 ± 13.5)		
Area of residence		
Rural	238	70
Urban	102	30
Marital Status		
Married	289	85
Unmarried	25	7.30
Divorced	2	0.60
Widow	24	7.10
Religion		
Hindu	288	84.80
Muslim	29	8.50
Sikh	6	1.70
Christian	0	0
Others (Jain etc.)	17	5.0
Type of family		
Nuclear	139	40.90
Joint	201	59.10
Education		
Illiterate	92	27 %
Literate and above	248	73 %

Table 1. Socio-Demographic Characteristics of Cancer Patients (n = 340)

Table 3. shows out of 340 cancer patients, most of the cancer patient's 1-2 years of duration have been passed since the cancer was diagnosed (39.7 %) followed by 27.4 % whose 6-11 months duration has been passed and 22.4 % were those who had 1-5 months duration since the cancer was diagnosed. The table 4. reveals that the majority of cancer patients were belonged to lower middle class (28.2 %) by their socioeconomic status (as per modified B.G. Prasad classification), followed by 25.3 % who were belonged to the lower class and 24.4 % belonged to the middle class.

Only 5 % of cancer patients had a positive family history of cancer. The most common substance abuse was tobacco chewing (27.3 %) followed by smoking (18.2 %) and a combination of substances (14.7 %) and 32 % of Patients have a co-morbid illness in Table 4 & 5.

Site / Gender of Cancer	Male	Female	Total No. (%)
Oral Cancer	80 (33.7 %)	10 (9.8 %)	90 (26.4 %)
Carcinoma Cervix	00 (00 %)	40 (39.9 %)	40 (11.8 %)
Breast Carcinoma	00 (00 %)	18 (17.7 %)	18 (5.2 %)
Colorectal Cancer	52 (22 %)	03 (2.9 %)	55 (16.3 %)
Gastro-intestinal Cancer	22 (9.3 %)	11 (10.9 %)	33 (9.7 %)
Haematological Cancers	29 (12.2 %)	05 (4.9 %)	34 (10 %)
Genito-urinary Cancer	23 (9.7 %)	14 (13.7 %)	37 (10.8 %)
Brain Cancers and Tumors	08 (3.3 %)	00 (00 %)	20 (5.8 %)
Others	04 (1.8 %)	01 (0.1 %)	08 (2.4 %)
Total	**237 (100)**	**103 (100 %)**	**05 (1.6 %)** **340 (100)**

Table 2. Distribution of Cancer Patients According to Gender and Site of Cancer

Socioeconomic Status	Frequency	Percentage
Upper Class	28	8.21
Upper Middle Class	47	13.78
Middle Class	83	24.34
Lower Middle Class	96	28.15
Lower Class	86	25.22
Total	**340**	**100**

Table 3. Distribution of Cancer Patients According to Their Socio-Economic Status (Modified B.G. Prasad Classification)

Duration	Frequency	Percentage
1-5 Months	76	22.4
6-11 Months	93	27.4
1-2 Years	135	39.7
2-4 Years	24	7.0
>4 Years	12	3.5
Total	340	100
Family H/O cancer		
Present	18	5.2
Absent	322	94.8

Table 4. Distribution of Cancer patients According to duration Since Diagnosis of Cancer and Family History

Substance Abuse	Frequency	Percentage
No addiction	97	28.6
Smoking	62	18.2
Alcohol	25	7.4
Tobacco chewing	93	27.3
Cannabis	13	3.8
Combination of substances	50	14.7
Co-morbid physical illness	Frequency	%
Present	110	32.7
Absent	230	67.3
Total	340	100

Table 5. Distribution of Cancer Patients According to Substance Abuse and Co-Morbid Physical Illness

DISCUSSION

As in the present study Cancer was fond to be more prevalent among males and mean age of presentation 50.85 ±13. 5 years.

Similar study done by Nikbakhsh et al,[5] who included 150 patients with a recent diagnosis of different cancers in Babol, Iran reported that 52 % were females and 48 % were males in their study and they found the mean age of the patients was 59.04 ± 14.34. 97.3 % were married, 2 % cases single and 1 0.7 % were divorced. Also, a study conducted by Shankar A et al.[6]

On 534 patients reported similarly that Males were 54.9 % and females were 45.1 % and the mean age of the patients was 51.78 years with SD 14.13. Srivastava V et al [7] in their study conducted on 200 breast cancer patients found that majority of cases were aged between 41 to 60 years and a majority of the respondents were married (79.50 %) compared to those who were still single/divorced (11.50 %) or widowed (9.0 %).

Similar to the findings of this study Berihun F et al.[8] in their study among 77 cancer patients found that 50.6 % were from the rural area and the rest 49.4 % were from the urban area and regarding marital status, the majority of the participants 68.8 % were married.

Out of the 340 Cancer patients, the maximum numbers of individuals were Hindus (84.8 %) by religion followed by Muslims (8.5 %). Distribution was according to Census 2011 maximum proportion of the population in Jabalpur district is Hindus by religion (87.65 %) followed by Muslims (8.27 %) and Christians (0.94 %).[9] Maximum number of cancer patients had joint family 59.1 % (201) and had a nuclear family 40.9 % (139) and this is in.

According to Sarnath D et al.[10] the most common cancer in men is the lip, oral cavity carcinoma and women breast carcinoma. The findings were in support of this study in reference to males but were in contrast with reference to females. This might be due to the fact that our study had not a national representative sample.

Findings of this study were not in accordance with the results other studies like Mishra SK et al.[11] in their study recruited 38 asymptomatic or minimally symptomatic cancer patients found that maximum participants (63 %) had upper aero-digestive tract (UADT) malignancy. Whereas Walker J et al[12] in their study found that maximum patients (40 %) had breast cancer. A study done in China by Hong j et al[13] on 1,217 cancer patients found that maximum patients had head and neck cancer 226(18.57 %). Nikbakhsh et al.[5] included one hundred fifty patients with a recent diagnosis of different cancers in Babol, Iran reported that maximum patients (30.7 %) had breast cancer. A study conducted by Berihun F et al.[8] Among cancer patients in Gondar University Hospital found that maximum patients had Blood cancers (31.2 %). The discrepancy might be due to fact that these studies were conducted in different countries or geographical locations and also might be due to different sample sizes estimated and patients of different types of cancer presented at their study setting.

Majority of cancer patients n present study belonged to lower middle class (28.2 %) by their socioeconomic status (Modified B.G. Prasad classification), followed by 25.3 % to lower class and 24.4 % to middle class.

Similar to our study Nanjaiah R et al.[14] who involved 131 diagnosed Gynaecological cancer patients reported that most of the participants belonged to lower socioeconomic strata. In contrast, Bektas D and Demir S[15] conducted a study in Turkey on patients of Gastrointestinal cancer found that maximum participants (78.3 %) belonged to moderate socioeconomic status. The discrepancy might be due to better socioeconomic status than our country.

Findings were in agreement with the study conducted by Kantak A et al.[16] among patients with oral cancer who found that maximum participants were tobacco chewers (92.86 %).In contrast to findings of this study, Gopalan M et al[17] in their study conducted on 384 diagnosed patients of carcinoma, reported that most common substance abuse was smoking (31.3 %)followed by alcohol consumption[17] in their a study conducted on 384. Whereas Nanjaiah R et al[14] in their study reported that maximum participants (97.7 %) had not substance abuse habit. The discrepancy might be due to regional difference where different lifestyle and behavioural pattern among study participants might prevail.

CONCLUSIONS

Commonest age of presentation for various cancer patients was found to be 45 to 59 followed by above 60. Overall most common cancer found to be oral followed by the colorectal cancers. Tobacco chewing was found to be the most common addiction among the patients reported in tertiary care hospital.

Limitation of the Study

This study was conducted in a single-center due to feasibility constraints, limited resources and time.

Financial or Other Competing Interests: None.

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