ORIGINAL RESEARCH

Prevalence of Cancer In The Malwa Region of Punjab- A Cross Sectional Study

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ABSTRACT

Introduction: Cancer has emerged as a major public health problem in developing countries and in industrialized nations.

Material and Methods: The survey was carried out in rural area of district faridkot of Punjab. The study population was selected by a multi stage random sampling and comprises of 26 villages that consisted of 34,000 population and 6672 families. A pilot tested performa was used as a tool for data collection. A house to house survey was carried out and data obtained was analysed usingEpi Data Version 3.1 and Chi square test was applied as test of significanceand p value <0.005 was considered as significant value.

Results: The population surveyed by present study consisted of total 33,632 subjects, 15760 males and 17872 females (1:1.1) from 26 villages. The diagnosis of cancer was confirmed in 45 cases (0.13%). The mean age of the cancer patients was found to be 48.1 years with more prevalence of cancer in fourth decade followed by third, fifth, sixth, seventh, fifth, eighth and first decade of life. According to anatomical distribution most prevalent cases were breast cancer followed by uterus/cervix and head and neck. The prevalence of cancer in relation to education showed a decline rate with significant p value (0.0463).

Conclusion: Cancer is a global problem, growing at alarming rates worldwide, mandatory steps and awareness are required to slow this growth.

Keywords: Cancer, Malwa region, Punjab, Breast cancer, Cervix cancer

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INTRODUCTION

Cancer is characterised by an abnormal growth of cells, ability to invade adjacent tissues and even distant organs, followed by eventual death of the affected patient if the tumor has progressed beyond that stage when it can be successfully removed. The burden of cancer is distributed unequally between developed and developing countries, with particular cancer types exhibiting different patterns of distribution. [1] Around 10 million new cancer cases are seen each year worldwide, 4.7 million are in the more developed countries and nearly 5.5 million are in the less developed countries. Cancer is currently the cause of 12% of all deaths worldwide. In approximately 20 years time, the number of cancer deaths annually will increase from about 6 million to 10 million. The principal factors contributing to this projected increase are the increasing proportion of elderly people in the world (in whom cancer occurs more frequently than in the young), an overall decrease in deaths from communicable diseases, the decline in some countries in mortality from cardiovascular diseases, and the rising incidence of certain forms of cancer, notably lung cancer resulting from tobacco use.[2]Regardless of prognosis, the initial diagnosis of cancer is still perceived by many patients as a life-threatening event, with over one-third of patients experiencing anxiety and depression. Cancer can be equally if not more distressing for the family, profoundly affecting

both the family's daily functioning and economic situation. The economic shock often includes both the loss of income and the expenses associated with health care costs.

The total cancer burden is highest in effluent societies, mainly due to a high incidence of tumour associated with smoking and western lifestyle, i.e., cancer of the lung, colorectum, breast and prostate. In developing countries, up to 25 per cent of tumours are associated with chronic infections, e.g. hepatitis B (liver cancer), human papillomaviruses (cervical cancer) and Helicobacter pylori (stomach cancer). In some western countries, cancer mortality rates have recently started to decline, due to reduction in smoking prevalence, improved early detection and advances in cancer therapy.In terms of incidence, the most common cancers worldwide are lung cancer (12.3 per cent of all cancers), breast cancer (10.4 per cent) and colorectal cancer (9.4 per cent).[3] In South East Asia Region, cancer accounts for a significant proportion of morbidity and mortality. Cancers contribute to 3.4 per cent of all deaths reported from India, 6.6 per cent from Indonesia, 2.9 per. cent from Myanmar, 0.8 per cent from Nepal, 4.2 per cent from Sri Lanka and 5.5 per cent from Thailand.[4] Cancer prevalence in India is estimated to be around 2.5 million, with over 8,00,000 new cases and 5,50,000 deaths occurring each year due to this disease in the country. Over 70% of the cases report for diagnostic and treatment services in advanced stages of the disease, resulting in poor survival and high mortalityrates.[6]The disease is associated with a lot of fear and stigma in the country. The Malwa region of Punjab has been considered as Cancer prone area in Punjab, few studies have been conducted on cancer in the region but the confirm data is still lacking; hence the present study was planned to conduct a survey with the prime objective to find out the prevalence of cancer in the region.

MATERIALS AND METHODS

The survey was carried out in rural area of district faridkot of Punjab. Thevillages for survey wereselected by a multi stage random sampling. For the implementation of health services, the rural area of faridkot district was divided into two blocks. The blocks were further divided into sub-centre and sub center caters the villages for health services apart from CHC, PHC and SHC. The study material was obtained by the multistage random sampling that consisted of randomly selecting one block (i.e.Bazakhana), 50% of sub center of selected block, 50% of villages of selected sub centers and total population of the selected villages. The smallest unit for the survey was the family. The last sample obtained for the study was 26 villages that comprised of 34,000 population and 6672 families. A pilot tested performa was used as a tool for data collection. A pamphlet consisting of health education materials, warning signals and other matter related with early detection of cancer was also distributed to every family. A house to house survey was carried out by medical and nursing interns, MBBS, BSc Nursing, B pharmacy and physiotherapy final year students. Before going to the field for survey an extensive training was provided to the students from the experts with a dummy exercise for filling the forms, communication with the families, identification of true cancer patients and suspect of cancer or those who have any complaint or symptoms that may be suggestive of cancer.

The strategy adopted was to cover the entire village in a day, a team of two members used to carry out the survey of 20-25 houses in a day,onenursing faculty for supervision of 50 students and one faculty of community medicine for monitoring of the entire village. Team used to record all the information on a pilot tested performaand provided a pamphlet containing health education, warning signals and other methods of prevention of the cancer and provided as much as the information to the family on each and every aspect of the cancer within their jurisdiction and knowledge. Documentary evidences was considered for confirmation of diagnosis of cancer patients. Each was given a unique number and also a unique number for village was provided.

STATISTICAL ANALYSIS

The data so obtained was entered into a data base of Epi Data Version 3.1 and analysis was carried. Chi square test was applied as test of significance

and p value <0.005 was considered as significant value.

RESULTS

The population surveyedby present study consisted of total 33,632 subjects, 15760 males and 17872 females (1:1.1) from 26 villages (table 1). The diagnosis of cancer was confirmed in 45 cases (0.13%). The crude prevalence of cancer was found 132/lakh and prevalence of cancer among people above 30 years increased to 262.66/lakh in present study. The mean age of the cancer patients was found to be 48.1 years with more prevalence of cancer in fourth decade followed by third, fifth, sixth, seventh, fifth, eighth and first decade of life. A total of 36 (80%) patients were found in the age group 30 to 59 years (table 2 and 3). Females were found to bemore affected with cancer with more prevalence in fourth decade of life (table 3), 68.9% of the total cancer was found in females which consisted of 32.2% of breast cancer, 25.8% of uterus/cervix (table-4). According to anatomical distribution 10 cases consisted of breast cancer out of 45; 8 was of uterus/cervix; 4 was of head and neck; 3 was of liver, esophagus, testis;2 was blood cancer, gastrointestinal tract, lungs; and 8 was others which includes cancer at other sites such as skin, thyroid or affecting any other organ. The prevalence of cancer in relation to education showed that 60% cancer patients were illiterate, 15% primary educated, 11% middle educated, 9% matric and 4%intermediate (table-5) and significant p value (0.0463).

DISCUSSION

A striking feature of cancer is its geographical and temporal variability. Thepopulation of a particular place at a specific time exhibits a certain pattern ofcancer, with more cases of one type and fewer of another. In another place,or at another time, the pattern of cancer in the population will be different.[2]

The prevalence of cancer in rural district of Faridkot, Punjab comprising of population size of 33,632 was found to be 0.13%. Thus, the crude prevalence of cancer was found to be 132/lakh and this prevalence was found to be more among people above 30 years increased to 262.66/lakh in present study.Thus, in the present study the pattern of distribution of cancer present in the population of Malwa region of Punjab is breast cancer followed by uterus/cervix cancer.

Breast cancer is the most common form of cancer and the principal cause of death from cancer among women worldwide.[7]Banning et al in 2011carried a review of literature and concluded that all the women above the age of 20 are at risk of developing breast cancer, irrespective of race, ethnicity, age or occupation and should undergo screening tests for prevention.[8] Those women who have positive family history of breast cancer in first-degree relatives (mother, sister, or daughter) are considered at twice risk of developing breast cancer than women without positive family history of breast cancer, and the risk increases three to four folds if a woman has 2

Age group	Male	Female	Total
0-19	4545	5444	9989
20-29	3119	3392	6511
30-39	2480	2569	5049
40-49	2060	2292	4352
50-59	1435	1504	2939
60-69	1380	1628	3008
70-79	447	719	1166
80 +	294	324	618
Total	15760	17872	33632

Table-1: Age and sex wise distribution of population

Age group	Male	Female	Total
0-19	0	0	0
20-29	0	2	2
30-39	4	7	11
40-49	3	12	15
50-59	3	7	10
60-69	2	2	4
70-79	2	0	2
80 +	0	1	1
Total	14	31	45

Table-2: Age and sex wise distribution of cancer patient

or more first-degree relatives who have breast cancer. This fact was reiterated by American Cancer Society (2010) report that women with a family history of breast cancer in a mother or sister are believed to have higher risk of breast cancer. A small, but important percentage of breast cancer cases are caused by the inheritance of a single copy of a mutated gene. About 5-10% of breast cancer cases are thought to be hereditary, resulting directly from gene defects (mutations) inherited from a parent.[9]

Sr. No	Anatomical site	Male	Female	Total
1	Head and neck	1	3	4
2	Esophagus	2	1	3
3	Blood Cancer	0	2	2
4	Breast	0	10	10
5	Uterus /Cervix	0	8	8
6	Liver	1	2	3
7	GIT	2	0	2
8	Lung	1	1	2
9	Testis	3	0	3
10	Others	4	4	8
Total		14	31	45

Table-3: Mean age of the Cancer patients (n=45)

The prevalence of uterus/cervix cancer in the present study was found to be 17.7%. Distribution, prevalence and incidence of Cervical Cancer in India as of 2002, the 1 year prevalence of cervical cancer in India was 101,583, and the 5 year prevalence was 370,243 accounting for approximately 26% of global prevalence, and 83% of total prevalence in South Central Asia (GLOBACAN 2002 database, IAR-C). In India, the age-adjusted incidence ofcervical cancer (30.7 per 100,000 women, 132,082 incident cases) is the highest relative to that of all other types of cancer, and is higher than the average for the South Central Asia region.[10] Cancer of the cervix accounted for 16 per cent of all cancers in women in the urban registries in

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1	Head and neck	1	3	4
2	Esophagus	2	1	3
3	Blood Cancer	0	2	2
4	Breast	0	10	10
5	Uterus /Cervix	0	8	8
6	Liver	1	2	3
7	GIT	2	0	2
8	Lung	1	1	2
9	Testis	3	0	3
10	Others	4	4	8
	Total	14	31	45

Table-4: Anatomical site wise distribution of cancer patients

Literacy	Male	Female	Total
Illiterate	4	23	27
Primary	4	3	7
Middle	2	3	5
Matric	3	1	4
Intermediate	1	1	2
Graduate and above	0	0	0
Total	14	31	45

Table-5: Literacy wise distribution of cancer patient

2005 as reported by Nandakumar A et al. [11] In India, cervical cancer is reported as the most common malignancy affecting women accounting for nearly 50% of all female malignancies.[12] In a study conducted in Madhya Pradesh, Uttar Pradesh and Rajasthan, the prevalence of cancer was found to be 15.0%, 0.023% and 51.85% respectively.[13] In a study carried out in Talwandi Sabo and Chamkaur Sahib in Punjab, age adjusted prevalence of confirmed cancer cases per 100,000 population

was 125 (107/85315) in Talwandi Sabo and 72 (71/97928) in Chamkaur Sahib. Cancer of female reproductive system, i.e., breast, uterus/cervix and ovary were more common in Talwandi Sabo whereas cancer of blood and lymphatic system, esophagus, and bones were more common in Chamkaur Sahib.[14] The prevalence of head and neck cancer was found to be 8.8% in the present study which is quite an alarming rate. Kulkarniet al[15] conducted a review and concluded that head and neck cancer is a burden over the Indian society because of prevalence of various tobacco related habits in different cultural tribes. Chaturvedi P[16] reported the overall 57.5% of global head and neck cancers occur in Asia especially in India. The prevalence of cancer in relation to education showed a decline in relation to literacy, as education plays a key role in causing awareness and knowledge of cancer risk factors and measures for prevention.[17] Cancer is a global problem, growing at alarming rates worldwide, mandatory steps are required to slow this growth.

CONCLUSION

Several reports regarding the burden of the cancer has been published and been publishing in newspaper regarding the increase in number of cancers and prevalence of cancer is more in Malwa belt of Punjabbut none of the report or survey has been conducted or approved by any scientific committee or institution/ university and these create havoc in public and community. The study recommends top media people not to publish these kinds of report or survey on cancer until unless these are approved any registered scientific committee or institutions/universities. A population based registry is definitely a demand in the Malwa belt in Malwa region of Punjab. Cancer is a disease of high mortality and morbidity ,costly treatment and also of associated social stigma. Irrespective of the prevalence of cancer all the effort should be directed to aware the community for early diagnosis and preventionto reduce the cancer

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