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Original Research Article

Cancer in Geriatric patients: A single center observational study

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Abstract: This hospital based observational, analytic study was conducted at a tertiary care cancer center in Western India during November 2015 to April 2016, after obtaining due permission from appropriate authority. Patients above 60 years of age who had histologically proven cancers (both newly diagnosed and previously diagnosed) and visited cancer OPD were included in this study. Total 1800 patients attended cancer OPD during the study period, out of them 489 patient were >60 years old (age range 61-91 years). The male: female ratio was 5:3. Ca lung was the most prevalent malignancy in our study population with prevalence of 30.9% (151/489). Ca breast and ca ovary were next common malignancy with prevalence of 9.4% (46/489) each. Ca gall bladder, ca oral cavity and ca colon were 7%, 5.5% and 3.5 prevalent respectively. In male cancer patients, Ca lung was the most prevalent (41.3%) and Ca oral cavity (7.4%) was second most common malignancy. Ca gall bladder was third common malignancy with prevalence of 6.8 %. In female cancer patients, Ca breast was the most frequent malignancy with prevalence of 25.2% (45 /179). Ca ovary was the second prevalent malignancy (prevalence 24%) and Ca lung was the third common (12.8%).
Keywords: Geriatric population, Cancer, Western India

INTRODUCTION:

In the modern era life expectancy has increased resulting in a demographic transformation of population from younger to geriatric society. In western world 60% of malignancy is diagnosed in persons above 65 years with the age adjusted cancer incidence rate of 2151/1, 00,000 populations [1, 2]. Also, the risk of cancer is 11 times more in geriatric age group compared to younger persons [3]. In India, 11% of its population will include geriatric population (>60 years age) by 2020 [4]. The incidence of cancer is also increasing with this increase in age and more than 12-23% of all cancers occur in geriatric patients [5, 6]. It is estimated that by 2020 prevalence of cancer will be more than one million in Indian geriatric population [7, 8].

The increased risk of cancer in this age can be explained by telomere shortening, defective DNA repair mechanism, immune-system alteration, hormonal alteration, variable expression of oncogenes and exposure to carcinogens in early life [9].

Despite increasing prevalence of cancer in this age group, these patients received less attention in terms of investigation and appropriate treatment. In view of paucity of information available on cancers in geriatric population in Western India, we endeavor the present study to find out the pattern of cancer in geriatric patients attending cancer OPD.

MATERIAL AND METHOD:

This hospital based observational, analytic study was conducted at a cancer care tertiary center in Western India during November 2015 to April 2016, after obtaining due permission from appropriate authority. Patients above 60 years of age who had histologically proven cancers (both newly diagnosed and previously diagnosed) and visited cancer OPD were included in this study. Patient data were collected from hospital records and stored in Microsoft Excel®. These data were analysed using SPSS® 20 for Windows®.

OBSERVATIONS:

Total 1800 patients attended cancer OPD during the study period, out of them 489 patient were >60 years old (age range 61-91 years). The male:

female ratio was 5:3. The maximum patients (263/489, 53.7) were in age group of 61-65 years. Majority of the patients were Hindu as the general population at study site was mostly Hindu population. Rural (238/489, 48.6%) and urban population (251/489, 51.4%) was almost equal in our study. (Table No.1)

Table-1: Epidemiological profile of study subjects

Age (years)	Total n(%) 489 (100)	Male n(%) 310 (63.4)	Female n(%) 179 (36.6)
60-65	263 (53.7)	157 (50.6)	106 (59.0)
66-70	122 (25.0)	89 (28.7)	33 (18.5)
71-75	63 (12.9)	44 (14.2)	19 (10.7)
76-80	29 (5.9)	16 (5.2)	13 (7.3)
>80	12 (2.5)	4 (1.3)	8 (4.5)
Religion			
Hindu	449 (91.8)	285 (91.9)	164 (91.6)
Muslim	34 (7.0)	20 (6.5)	14 (7.8)
Sikh	5 (1.0)	4 (1.3)	1 (0.6)
Christian	1 (0.2)	1 (0.3)	0 (0.0)
Inhabitant			
Rural	238 (48.6)	157 (50.6)	81 (45.3)
Urban	251 (51.4)	153 (49.4)	98 (54.7)

Table-2: Type of cancer in geriatric study population

	Total n(%) 489 (100)	Male n(%) 310 (63.4)	Female n(%) 179 (36.6)
Ca Lung	151 (30.9)	128 (41.3)	23 (12.8)
Breast Ca	46 (9.4)	1 (0.3)	45 (25.2)
Ca Ovary	46 (9.4)	3 (1.0)	43 (24.0)
Ca GB	34 (7.0)	21 (6.8)	13 (7.3)
Ca Oral cavity	27 (5.5)	23 (7.4)	4 (2.2)
Lymphoma	22 (4.3)	15 (4.5)	7 (3.9)
Ca Colon	17 (3.5)	12 (3.9)	5 (2.8)
Ca Prostate	16 (3.3)	16 (5.2)	0 (0.0)
CLL	16 (3.3)	13 (4.2)	3 (1.7)
Multiple myeloma	15 (3.1)	11 (3.5)	4 (2.2)
CML	15 (3.1)	10 (3.2)	5 (2.8)
Secondary in Liver	12 (2.5)	8 (2.6)	4 (2.2)
Ca Oesophagus	11 (2.2)	9 (2.9)	2 (1.1)
Ca larynx	9 (1.8)	9 (2.9)	0 (0.0)
Ca Stomach	8 (1.6)	7 (2.3)	1 (0.6)
Ca Pancreas	7 (1.4)	1 (0.3)	6 (3.4)
Ca Urinary bladder	6 (1.2)	5 (1.6)	1 (0.6)
HCC	5 (1.0)	4 (1.3)	1 (0.6)
Ca Cervix	4 (0.8)	0 (0.0)	4 (2.2)
Sarcoma	4 (0.8)	4(1.2)	0 (0.0)
AML	3 (0.6)	3 (0.9)	0 (0.0)
Polycythemia	3 (0.6)	1 (0.3)	2 (1.1)
RCC	3 (0.6)	3 (0.9)	0 (1.0)
Thymoma	3 (0.6)	0 (0.0)	3 (1.7)
ALL	2 (0.4)	1 (0.3)	1 (0.6)
Aplastic Anemia	1 (0.2)	1 (0.3)	0 (0.0)
Ca Mandible	1 (0.2)	0 (0.0)	1 (0.6)
Ca Penis	1 (0.2)	1 (0.3)	0 (0.0)
Ca uterus	1 (0.2)	0 (0.0)	1 (0.6)

Ca lung was the most prevalent malignancy in our study population with prevalence of 30.9% (151/489). Ca breast and ca ovary were next common malignancy with prevalence of 9.4% (46/489) each. Ca gall bladder, ca oral cavity and ca colon were 7%, 5.5% and 3.5 prevalent respectively. (Table No. 2)

In male cancer patients, Ca lung was the most prevalent (41.3%) and Ca oral cavity (7.4%) was second most common malignancy. Ca gall bladder was third common malignancy with prevalence of 6.8 %. (Table No. 2). In female cancer patients, Ca breast was the most frequent malignancy with prevalence of 25.2% (45 /179). Ca ovary was the second prevalent malignancy (prevalence 24%) and Ca lung was the third common (12.8%). (Table No. 2)

DISCUSSION:

In India geriatric population is increasing due to longer life expectancy and cancer burden is also increasing in this population. Because of the paucity of data regarding cancer in geriatric population in Western Indian sub-continent, this study was endeavor to assess cancer patients in our cancer treatment center.In our study prevalence of malignancy in geriatric population was 27.17% which is equivalent to previous Indian studies and few international references [10- 19].

Lung cancer was the most prevalent malignancy in our study. Similar to our finding, many previous Indian studies also reported lung cancer as the most prevalent malignancy in geriatric patients [20, 21]. This finding is also in echo with meta-analysis of various cancer registries [22]. The oral cancer was the next common cancer in geriatric patients in current study. This observation is also matches with meta-analysis of various cancer registries [22]. In a meta-analysis of various cancer registries, it was predicted that in 2016, in Indian geriatric population cancer incidence will be about 3, 20,000 in men and 2, 60,000 in women. In men most common cancer will be of lung (20%) followed by prostate (13%), while in women highest cancer incidence will be of breast (28%), followed by cervix (9%) and ovary (6.5%). [20] Theresults of the current study also show lung cancer as the most common malignancy in man and breast cancer in women. For predicting these cancer incidence cases for the year 2016, Balkrishna *et al.;* [20] used population estimated by Registrar General and Mumbai registry data of 1971-2001 duration. These time and geographic difference might be the reason for some difference of their prediction and our study results. We found ca ovary as second most common malignancy and ca cervix as third most common. This difference might be explained by the short study duration (6 months) and a single center study; we need large sample size for validation of our results.

So lung carcinoma and oral cancer are the most frequent malignancy among male population in current study making them major public health issues from oncology side and suggesting the priority of tobacco control for cancer control in India. In fact tobacco control will reduce many other chronic diseases along with tobacco-related cancers [23, 24].

In current study, among female cancer patients, Ca breast was the most frequent malignancy with prevalence of 25.2% (45 /179). Ca ovary was the second prevalent malignancy (prevalence 24%). Cervical cancer was seen in 2.2% females only. Result of previous studies and meta-analysis of various cancer registries also matches with our study [22,25,26]. Rajendra *et al.;* [22] observed an increase in breast cancer and a decrease in cervical cancer in Indian populations. The increase in breast cancer might be explained by redistribution of risk factors including late marriage and life style changes occurring as a result of socio-economic improvement [27]. The decline in cervical cancer might be due to family planning, greater awareness for genital hygiene, and visiting clinicians at pre-clinical stage.

Whatever be the reason, the highest prevalence of breast cancer highlights needs for the control of female breast cancer at the primary, secondary and tertiary level within India. The breast cancer can be detected at an early stage via self-breast examination or clinical breast examination after the age of 50 [28].

Geriatric Cancer patients (≥60 years) deserves a special attention for early detection, pre-treatment evaluation, treatment and post treatment care. Also it is very crucial to take care of coexisting diseases besides cancer as they might compete for care and treatment with a newly diagnoses tumor in geriatric patient [29].

LIMITATIONS:

Our study had some limitations. This study was done at a tertiary care centre with in a limited time period of 6 months resulting in a limited sample size, thus the results may not imply on general population, and further studies with a larger sample size and longer duration time frame are needed.

CONCLUSION:

Ca lung was the most prevalent malignancy in our study population with prevalence of 30.9%. Ca breast and ca ovary were next common malignancy with equal prevalence of 9.4%. In male, Ca lung was the most prevalent (41.3%) and Ca oral cavity (7.4%) was second most common. Ca gall bladder was third common malignancy with prevalence of 6.8 %.In female, Ca breast was the most frequent malignancy with prevalence of 25.2%. Ca ovary was the second

prevalent malignancy (24%) and Ca lung was the third common (12.8%).

CONFLICT OF INTEREST:

None of the authors have a Conflict of Interest.

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