ORIGINAL ARTICLE

Breast Cancer: Analyzing Its Epidemiology And Clinical Profile Among Ethnic Kashmiri Females

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ABSTRACT

Introduction: Cancer of breast is a major public health issue globally as it is the most common cancer among women. In Kashmir it is the second leading cancer in women but very limited studies have been done on this disease in this state. Our objective was to study the Clinico-epidemiological profile of breast cancer in ethnic Kashmiri females.

Materials and Methods: A Hospital-based, cross-sectional study was conducted at a tertiary hospital in Kashmir Shri Maharaja Hari Singh (SMHS) Government Hospital, Srinagar. A Semi-structured pilot tested questionnaire was administered to 102 ethnic Kashmiri female patients with histopathologically confirmed breast cancer.

Results: The mean age of cases was 47.87 years. Highest numbers of cases (57%) were in the age group of 31 to 50 years. About 84% cases were married. Most of cases belonged to middle class of socio economic status. About 62.9% of cases were post menopausal. In about 55% of cases right breast was involved. In 88% of cases the histopathology showed invasive ductal carcinoma and maximum cases were diagnosed in stage II of the disease. Mean age at menarche and first child birth was 12.19 ±1.16 years and 23.56±8.322 years respectively.

Conclusion: About two third of the patients were below 50 year of age and in about 35% cases cancer was diagnosed in advanced stages. Invasive ductal carcinoma was the diagnoses in majority of cases.

Keywords: Breast cancer, Epidemiology, Kashmir

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INTRODUCTION

Cancer of breast is a life-threatening disease which affects women not only physically and psychologically but it affects a part of her body which is associated with her sense of womanliness exposing her to huge emotional trauma. Among women breast cancer is the most common cancer diagnosed globally (25.2 %of all new cases of cancers).[1] A recent report by the Indian Council of Medical Research predict the number of breast cancer cases in India to rise to 106,124 in 2015 and to 123,634 in 2020.[2] Breast cancer is the second most common cancer among women in India and accounts for 7% of global burden of breast cancer.[3] Over the years, the incidences of breast cancer in India have steadily increased and as many as 100,000 new patients are being detected every year.[4] A 12% increase has been registered by cancer registries from 1985 to 2001.[2] Among Kashmiri women breast cancer is the second leading cancer after esophageal cancer, with an incidence rate of 12.6 per 100,000.[5] It is believed that breast cancer is a multi factorial disease and it is result of the interaction of genetic and environmental factors. The common occurrence in our part of the world warrants more and more research regarding this disease. This study was done with the purpose of describing the clinical, pathologic and epidemiological characteristics including the risk factors of female breast cancer patients in a leading cancer hospital of as the review of the available literature indicated very limited number of such studies done in our state.

MATERIALS AND METHODS

The present study was a hospital based cross

sectional study conducted in Shri Maharaja Hari Singh (SMHS) Hospital located at Karan Nagar in district Srinagar Jammu and Kashmir (INDIA) for the period of one year from May 2013 to April 2014.The study was conducted after the clearance from ethical committee of government medical college and associated hospitals. SMHS hospital is one of the two tertiary hospitals in Kashmir which is involved in diagnosis and treatment of cancer patients, the other being Sheri Kashmir institute of medical sciences (SKIMS) located in the same district. Patients from the whole valley come for diagnosis and treatment of cancer to this hospital. The patients come to this hospital from all parts of Kashmir and thus are representatives of the general population of Kashmir valley.

Definition of case

Female patients with histologically confirmed primary breast cancer diagnosed for the first time during the one year study period or within 6 months before the start of data collection were taken as cases.

Definition of an ethnic Kashmiri female

Ethnicity is defined as a group having common language, common cultural practices and common real or fictitious ancestry.[6] The females having Kashmiri as there predominant language and having no known history of ancestry of non Kashmiri origin were considered as ethnic Kashmiri females.[7]

Selection of cases

Cases were selected from department of surgery and department of radiation and oncology SMHS hospital. Ethnicity was determined by asking about the predominant language of the study participants and their ancestral history. All the cases that came to SMHS hospital during this period were taken for the study and a total 102 patients of breast cancer were included in the study after fulfilling the exclusion and inclusion criteria. Patients who were excluded in our study included non residents of Kashmir, old cases of breast cancer (diagnosed more than 6 months before the start of study) and patients having any other type of primary cancer.

After selection consent was taken from each participant for the study. Information was collected through interview on the basis of a predesigned semi structured questionnaire which included the information about socio-demography, reproductive factors (age at first delivery, parity, age at menarche, age at menopause, oral contraceptive use) and clinical and pathological profile of breast cancer.

STATISTICAL ANALYSIS

Data was entered in Microsoft Office Excel and categorical variables were summarized as percentages, continuous variables as mean and Standard deviation.

RESULTS

Majority of the cases (about 57%) were in the age group of 31 to 50 years. About 25.5% of patients were less than 40 years of age and 22.5 were more than 60 years of age. The youngest being 21 years old and the oldest case was 80 years old. Mean age of cases was 47.87 ±13.65 years. Most of the study participants (90%) were homemakers. About 2% of cases were students. Majority of the study participants (84%) were currently married. Only 2.9%of cases were never married. Most of the study participants belonged to middle class according to modified kuppuswamy socioeconomic classification.[8] Only 0.9% of cases were from upper class. About 78%of cases were illiterate and only 5% cases were graduate. Majority of the study participants (62.7%) were post menopausal. Mean age at menarche was 12.19 ±1.167 years. About 62.7% had attained menarche at age less than 13 years. Mean age at menopause 45.37±6.10 47.92±4.47 years with about 66.6% having age at menopause more than 45 years. About 62.5% of cases had their menopause naturally while 15.6% had their menopause due to hysterectomy. About 7.8% women were nulliparous and 87.3% were multiparous. Mean age at first childbirth was 25.56±4.83 years. Only 8.5% had their first child birth at less than 20 years of age and 30.9% had their first childbirth at the age of 30 or more years. Out of the 102 patients only 15 had used hormonal contraceptives and only 7 among them had used it for more than one year with average

duration of use being 1.8 years. About 54% of cases had their right breasts involved and only 1% had bilateral involvement. Upper outer quadrant was the most commonly involved quadrant, being effected in about 62.7%of cases followed by upper inner and lower outer quadrants which had equal involvement of 14%. The most common pathological type of breast cancer was invasive ductal carcinoma which was present in about 88.2%of cases rest of the pathological types were less common. In about 50.9%of cases tumor had spread to T2 stage, among 21.5% it was at T1 stage and in 5.88% cases it had gone to T4 level. About one third of the cases had involvement to the level of N1 and only 7%had involvement to the level of N2. In approximately 13% of the cases there was distant metastasis and in about 34% of cases metastasis could not have been assessed at the time when data was taken from them. In 45%of cases the cancer was diagnosed in stage 2 and in 22.5% it was diagnosed at more advanced stage 3rd of the disease. Breast mass was the chief complaining at the first visit to a health facility in about 79.4% of patients. In about 44.4%of patients modified radical mastectomy was the intervention done while21.6% were treated by MRM plus chemotherapy and 26.5% were treated by MRM plus chemo radiotherapy.

DISCUSSION

A total of 102 patients with breast cancer confirmed by histopathology were taken in the study. The mean age of cases was 47.87 years. Breast cancer is most common in the age group of 35 to 50 years in Indian women as compared to western countries where the incidence is more common at later age.[9,10] In our study also we found higher number (about 57%) of cases in the age group of 31 to 50 years. Majority of the study participants (78%) were illiterate. In our study about 84% cases were married and these results are consistent with other studies done in India. Many studies have shown that of breast cancer is more common in married women than unmarried women. Most of cases belonged to middle class according to the modified kuppuswamy classification[8] of socio economic status and about 26.4% of cases belonged to lower socioeconomic class. About 37.3% of study participants were premenopausal and rest of the study participants (62.9%)were post menopausal and these results are comparable to the literature on the disease.[10,11] Studies show that the incidence rate of premenopausal breast cancer in the developing countries is invariably lower than that in the more developed Countries. However, the literature also reveals that proportion of premenopausal breast cancer from total breast cancers is substantially higher in these countries compared to more developed countries. In addition, the studies reveal that the global variation and increase in the incidence rate pertains mostly to postmenopausal breast cancers. In nearly two third of the cases the age at menarche was less than 12 years. Early age at menarche has been recognized as a risk factor for development of breast cancer in many studies.[1,12] In a case control study in Nagpur India Meshram II et al (2009) found age at menarche less than 12 years was a risk factor for breast cancer. it has been established that late age at is one of the major risk factor for development of breast cancer by various studies.[9,12] In our study about two third of the patients had their natural menopause at more than 45 years of age. In our study 15 patients had used hormonal contraceptives with 9 patients having used oral hormonal contraceptives. About half these 15 cases had used hormonal contraceptives for more than one year. Many studies have found that users of hormonal contraceptives for more than a year have more risk of developing breast cancer than never users.[13-15] We found mean age at first childbirth in our study participants was 25.56± 4.83 years. Only 8.5% had their first child birth at less than 20 years of age and 30.9% had their first childbirth at the age of 30 or more years. Studies have found that the risk of breast cancer is more for women who had first child after 25 years compared to women having first child at or before 20 years of age.[16] Ramchandra Kamath (2013) in a case control study found that age more than 30 years at first child birth had a significant association with breast cancer.[17] In about 55% cases right breast was involved and only 0.9% percent were having bilateral breast cancer. Studies have found different results regarding the laterality of breast cancer. Many studies have found it to be more common in left

Age Group In Years	Number (%)
21-30	9(8.82%)
31-40	28(27.45%)
41-50	32(29.41%)
51-60	18(17.64%)
61-70	9(8.82%)
>=71	6(5.88%)
Mean age	47.87±13.65 years
Occupation	**Number (%)**
Homemakers	92(90.1%)
Student	2(1.9%)
Teacher	5(4.9%)
Others*	3(2.9%)
Marital status	**Number (%)**
Currently Married	86(84.31)
Never married	03(2.94%)
Widow	13(12.74%)
Social status	**Number (%)**
Class I	1(0.9%)
Class II	37(36.2%)
Class III	37(36.2%)
Class IV	27(26.4%)
Education status	**Number (%)**
Illiterate	80(78.4%)
Primary	4(3.9%)
Middle School	2(1.96%)
High School	2(1.96%)
Higher Secondary	9(8.8%)
Graduate	5(4.9%)
Menopausal satus	**Number (%)**
Premenopausal	38(37.3%)
Postmenopausal	64(62.7%)
Hormonal contraceptives	**Number (%)**
Yes	15(14.7%)
No	8785.3%)
Parity	**Number (%)**
Single Parous	5(4.9%)
Multi parous	89(87.3%)
Nulli parous	8(7.8%)

Table-1: Distribution of study participants according to sociodemographical characteristics and reproductive characteristics

COMPLAINTS AT FIRST VISIT	NUMBER (%)
Breast mass	63(79.41%)
Breast mass and Axillary node	20(19.6%)
Skin retraction plus Axillary node	1(0.9%)
Breast side affected	**Number (%)**
Right	55 (53.9%)
Left	46 (45.1%)
Bilateral	1 (0.9%)
Quadrant of breast affected	**Number (%)**
Nipples	1(0.9%)
Areola Nipple	2(1.9%)
Lower Inner Quadrant	5(4.9%)
Lower Inner Quadrant And Nipple	1(0.9%)
Lower Outer Quadrant	14(13.7%)
Upper Inner Quadrant	14(13.7%)
Upper Inner Quadrant And Nipple	1(0.9%)
Upper Outer Quadrant	62(62.7%)
Upper Outer And Lower Outer Quadrant	1(0.9%)
Upper Outer And Lower Outer Quadrant And Nipple	1(0.9%)
Histopathology	**Number(%)**
Invasive Ductal Carcinoma	90(88.2%)
Insitu Ductal Carcinoma	5(4.9%)
Invasive Ductal Carcinoma With neuroendocrine Features	2(1.9%)
Metaplastic Carcinoma	1(0.9%)
Invasive Ductal carcinoma With Paget disease of breast	1(0.9%)
Lobular Carcinoma	1(0.9%)
Malignant Phylloid Tumor	1(0.9%)
Medullary Carcinoma	1(0.9%)
STAGE	**Number (%)**
I	16(15.7%)
IIa	20 (19.6%)
IIb	26 (25.5%)
IIIa	14 (13.7%)
IIIb	9 (8.8%)
IV	13 (12.7%)
Not done	4 (3.9)
Treatment	**Number (%)**
Modified radical mastectomy (MRM)	45 (44.1%)
Chemotherapy	2 (2.0%)
No treatment till date	5(4.9%)
MRM and radiotherapy	1 (1.0%)
MRM and chemotherapy	22(21.6%)

Table-2: Distribution of cases according to the clinico pathological features

while others have found results similar to our study.[18,19] Some studies have also found equal incidences in both sides.[20] Synchronous bilateral breast cancers are rarely encountered.

Breast cancer usually presents as a lump as was evident in few studies.[21] In our study we found that in about 79.4% of patients only Breast mass was the chief complaining at the first visit to a health facility and 19.6% had breast mass with Axillary node at presentation. Most common quadrant involved in the study participants was upper outer quadrant and the finding is consistent with other studies.[22]The predominant histological type of breast cancer in our study was invasive ductal carcinoma of no special type (NST), diagnosed in about 88% of cases. This type of breast cancer has been found to be most common

histological type of breast cancer in most of the studies.[23] About 45% cases in our study were diagnosed in stage 2 of the disease. The disease is diagnosis earlier in developed countries where there are high rates of screening tests performed in the vulnerable population.[9] In developing countries like ours the disease is usually diagnosed in advanced stages because of lack of awareness and lack of mass screening programmes.

CONCLUSION

Breast cancer is a deadly disease which affects women physically as well as psychologically. In India breast cancer has become a huge burden and its incidence is increasing at a high pace among women including Kashmiri women. Breast cancer occurs decades earlier in Indian women compared to western women. Majority of the breast cancer cases in our study were infiltrating ductal carcinoma and were presented in advanced stages of disease with about one fourth of the total cases being less than 40 years of age. Our study has found almost similar clinic epidemiological features in ethnic Kashmiri females as that found in other Asian and Indian studies. For earlier detection and treatment of breast cancer strategies to increase the awareness and screening programmes are warranted in our part of the world. Larger community based in depth studies are needed to investigate more about this disease as the incidence is increasing in our country.

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