

Clinicopathological profile of breast cancer in North India: a study from a tertiary hospital with review of literature

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Abstract

Breast cancer is rising in India. It is the most common cancer in metropolitan studies and next only to cervical cancer in all over the nation. It has multiple risk factors described in literature. We aimed to study some of these clinicopathological factors in north Indian women with breast cancer. The results though were not very different, but some of them require the attention of the readers.

Keywords: Clinical, pathological, risk factors, breast cancer, India, profile

Introduction

India is a sub-continent with wide ethnic, cultural, religious and economic diversity and variation in the health care infrastructure. The health care facility pattern is heterogeneous, with numerous regions where the benefits of the awareness, early diagnosis and multidisciplinary treatment programs have not reached.

Data on the clinical profile of breast cancer from India is scant. The age-standardized rates of breast cancer in India are significantly lower, almost one quarter to one-third of those in North America and Europe respectively (Ferlay et al, 2004). The postulated reasons for the lower incidence of this disease are believed to be lower socioeconomic status, delayed menarche (14 years vs. 12.6 years in white women), relatively early age at birth of first child, high parity and nearly universal and prolonged breast-feeding. However, the

mortality rates are proportionally higher, with an incidence/mortality ratio of 0.48 compared with 0.25 in North America (Parkin et al, 1999). Late diagnosis is a major factor for increased mortality as the majority of the patients present in advanced or metastatic stage. This is primarily attributed to lack of access to medical facilities, virtually non-existent breast cancer screening programs, lack of awareness and social-cultural attitudes. Accordingly, five-year survival rates have been poorer, reported as 42% and 48% in two population-based studies (Goel et al, 1995; Gajalakshmi et al, 1997). Early breast cancer (EBC) constitutes about 30% of the breast cancer load in our country while the remaining present with locally advanced or metastatic stage (Nandakumar et al, 1995). We undertook this study to analyze the presentation of breast cancer in a major cancer center in North India.

Materials and Methods

All patients of breast cancer presenting in our hospital between January 2012 to December 2013 were studied retrospectively. Total number of patients included in the study was 172.

Results

The median age of presentation was 46 years. The youngest patient was 21 years and oldest was of 80 years. There was no male patient. The mean duration of symptoms was 9.14 months (range = 8 months to 60 months). 60 % had lump in left breast while remaining 40 % presented with right breast lump. Lump was presenting feature in 99 % patients with a mean size of 4.88 cm. Only 2 patients presented with nipple discharge. No patient was diagnosed on screening mammography. 42 % patient had lump in lower outer quadrant, 38 % in upper outer quadrant, 12% retro-areolar and remaining 8 % lower inner quadrant. None of the patients had a mass in upper inner quadrant. None of these patients had positive family history. 61% patients were premenopausal. Mean age of menarche was 12.38 years and menopause was 48.34 years. Majority (98%) were multipara with mean of 3.29 issues with a mean age of 18 years at first delivery. 98% of patients had breastfed. 63% patients presented with locally advanced breast cancer and 37 % with early breast cancer .46 % of patients were node positive on first visit. Surprisingly none of them was found to have systemic metastatic disease. Invasive ductal carcinoma was seen in 91 % patients while remaining 9 % had invasive lobular carcinoma. None of the patients was diagnosed at in situ stage. Table 1 shows percentage of patients that presented at different stages of the disease. 48 % patients were ER positive and 40 % were PR positive. Her 2 neu testing was not done routinely. Modified radical mastectomy was performed in most cases.

Table 1: Shows percentage of patients that presented at different stages of the disease.

STAGE (TNM)	PERCENTAGE OF PATIENTS
I	0.05
IIA	25.39
IIB	30.01
IIIA	11.11
IIIB	22.22
IIIC	0.03

Discussion

Breast cancer accounts for 19-34% of all cancer cases among women nationally (National Cancer Registry Programme 1984-93; 1990-96). As per the data from national and regional cancer registries, it is the commonest cancer amongst women in Delhi, Mumbai, Ahmedabad, Kolkata and Trivandrum (National Cancer Registry Programme 1984-93; 1990-96; Parkin DM et al, 1997). In all other Indian registries, it is listed as the second leading site among women. The age-standardized incidence rates vary from 9-28.6 per 100,000 women. The median age at presentation was 46 years in our study which was less than normal. The incidence rates in India begin to rise in the early thirties and peak at ages 50-64 years (National Cancer Registry Programme 1990-96). In the US, rates peak at the age group of 75+ years. Age-specific incidence rates in India remain relatively stable compared with the US where rates rise dramatically after 65 years of age. The lower age at diagnosis is also seen for other cancers in India, the reasons are not entirely clear but a major factor could be under-diagnosis and under-reporting amongst the elderly population (Bhutani et al, 2002). Mean duration of onset of symptoms to consulting a physician was 9.14 months which is slightly less than the reported average of 10.8 months (Pakseresht et al, 2014) .60% had lump on left side and 40 %

on right side. This was in accordance with other studies (Perkins et al, 2004).

Breast lump was the presenting feature in almost all cases. Only one patient had nipple discharge. This was higher than the international standards where screening mammography detects 20 % lumps in situ stage. In almost all developed countries, the use of routine screening mammography has led to the detection of very early lesions. As mammographic facilities are not widely available here and there is no nation-wide breast-screening program, the commonest mode of presentation remains a lump in the breast, 96% of the patients in the present series presented with a breast lump while in US only 43 % present as breast lump. The rest are diagnosed by screening mammography (Kellie et al 2010).

Lower outer quadrant was the most common site (42%) in contrast to many studies that state that upper outer quadrant is the most common site (60%) (Azzena et al,1994; Aljarrah , 2014).

Majority of our patients (61%) were premenopausal whereas western literature says that 73% of white female patients are postmenopausal at diagnosis (Pegoraro et al, 1985).

Mean age of menarche was 12.38 years and menopause was 48.34 years. Within the European Prospective Investigation into Cancer and Nutrition cohort, women who had early menarche (≤ 13 years) demonstrated a nearly twofold increase in risk of hormone receptor positive tumors (Ritte et al, 2012).

Every year delay in the onset of menopause confers a 3% increase in risk and every five year delay in the onset of menopause confers a 17% increase in risk of breast cancer (Hsieh et al, 1990;Kelsey et al, 1993).

Majority (98%) were multipara with mean of 3.29 issues with a mean age of 18 years of first term delivery. Nulliparous women had a higher risk of more aggressive breast cancer subgroups than women with one

child. Women with a late first childbirth (>30 years) had a higher risk of more aggressive breast cancer subgroups than women with an early first childbirth (≤ 20 years) (Butt, 2011).

98% of patients had breastfed. Breastfeeding may protect against breast cancer through hormonal mechanisms (delayed ovulation, increased breast differentiation, or changing the hormonal environment of the breast) or directly by excretion of carcinogenic agents (Murrell, 1991).

63% patients presented with locally advanced breast cancer and 37% with early breast cancer.

46 % of patients were node positive on first visit. Surprisingly none of them was found to have metastatic disease. According to the analysis on LABC from all breast cancer cases recorded in Surveillance Epidemiology and End Results (SEER) database between the years 1992–1999 in the United States, the incidence of LABC were found to be only 4.6% of all female breast cancers [Anderson et al,2003]. This is attributed to mammographic screening which was absent in our case.

Invasive ductal carcinoma (IDC) was seen in 91 % patients while remaining 9 % had invasive lobular carcinoma (ILC). This was in correlation with literature.(Dossuss et al,2015). None of the patients was diagnosed at in situ stage. 48 % patients were ER positive and 40 % were PR positive which is similar to other studies (Biesterfeld et al,1997).

Surgery was performed initially on all the patients. MRM was done in most patients. Only 11 percent of patients underwent Breast Conservation Surgery (BCS). The acceptance of BCS in India is different from that in the developed world. Data from the American College of Surgeons show that in 1995, 58% of Stage I and 36% of Stage II cancers were treated by breast-sparing techniques (Bland et al, 1998).26 of EBC patients didnot opt for BCS and underwent MRM despite fitting into the category of

breast conservation. Over the past five to six years, however, the trend is changing especially in the urban areas, as more women are opting for breast conservation.

Conclusion

Median age of presentation in our center was much lower than that of western population. Most of them were multipara and who had breast fed in contrast to western data. 63% number of patients presented in locally advanced stage in spite of being local residents. Need of the hour is to improve breast cancer awareness and forming new guidelines for screening if necessary.

Conflicts of interest: None

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