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Clinico-Epidemiological Study of Breast Cancer: A Retrospective Analysis

Medical Science

KEYWORDS : Breast carcinoma, epidemiology, survival

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ABSTRACT

Introduction- *This is a retrospective study of breast cancer; done at tertiary centre in India.*

Material-*A total of 235 registered patients during a period of January 2009 to July 2011 were included and followed for a period of 18 months. We studied the clinico- epidemiological features, stage at presentation and treatment outcome of breast cancer. The data were analyzed using SPSS software version 16.0.. The Kaplan-Meier survival analysis was done to find out the survival.*

Results- *It was observed that maximum number of patients (35.3%) belonged to the age group of 41-50 years with mean of 47.3 ± 11.3 years.The age range was 24-80 years; majority of patients being premenopausal.The predominant clinical feature was painless lump in the breast (98.7%).The most common stage at presentation was IIIB followed by stage IV. Kaplan Meier survival analysis of patients followed over 18 months period showed that at 5 months 93.3% of the cases survived disease free, at 9 months it was reduced to 81.7%, thereafter at 18 months it was reduced to 63%.*

Conclusion- *Painless lump was the most common manifestation with more than half of the cases were stage III or higher. Acceptance of the treatment modality was one of the major limitations` as only half of the cases received treatment. Therefore early detection and complete treatment are important to improve the outcome of breast cancer.*

INTRODUCTION:

Breast cancer is the second most common cancer in the world and the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed and 521,900 deaths in 2012 [1]. It is the second most common cancer among women in India ; accounts for 7% of global burden and one-fifth of all cancers among women in India[2].

Breast cancer is a major concern in the developing countries due to the rising incidence, delay in presentation and dismal outcome. Despite improvements in early diagnosis of breast cancer, locally advanced disease account for larger proportion of breast cancer cases worldwide. Various Indian studies show that majority presented in locally advanced stage [3,4], the possible reasons could be due to lack of mammographic screening ,unawareness, limited access to medical facility , fear of disease and psychological reasons.The purpose of this study was to describe the clinico- epidemiological features of breast cancer in the current local scenario as the data from this region of the country is lacking . It could help bring the true insight to the picture. Further, the results of the study can provide data for epidemiological interests.

MATERIAL AND METHODS:

The present study comprised a retrospective analysis conducted at a tertiary care center, in the Department of Radiotherapy and Radiation Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi in collaboration with the Department of General Surgery, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Histopathologically proven cases of breast cancer registered during the period of January 2009 to July 2011 were included in the study.Patients were assessed regarding demographic profile, stage at presentation, status at presentation , risk factors, pathological type, treatment and its outcome. The treatment policy was based upon the stage at presentation. Patients were followed for 18 months from date of registration to assess the loco-regional control along with distant metastasis by clinical examination and by necessary investigations. The data were analyzed using SPSS software version 16.0. The categorical variables were mentioned as number and percentage. The Kaplan-Meier survival analysis was done to find out the survival.

OBSERVATIONS AND RESULTS : In the present study, a total of 235 patients diagnosed as carcinoma breast who reported to the Outpatient Departments of Radiotherapy and Radiation Medicine & General Surgery were included. Maximum number of patients (n=83,35.3%) belonged to the age group of 41-50 years (Table 1). Only 4 out of 235 cases (1.7%) were diagnosed in the age group of 71-80 years. The age range was 24-80 years with the mean of 47.3 ± 11.3 years. The majority of the patient belonged to the rural background(77%). The gender wise distribution showed that majority of patients were females (97%), while 3% were males.About half of the cases (47.9%) had parity ranging between 1-3. However, only 3 patients (1.5%) were nulliparous.

The predominant clinical feature was painless lump in the breast (98.7%). The other presenting features were nipple discharge (7.7%), pain in the breast (6.4%), ulceration over breast (2.6%). Thus, the triad of lump, discharge and pain was the major clinical feature in these patients. The other less common presenting features noted were back pain (2.1%), cervical lymphadenopathy(1.7%), axillary lymphadenopathy (0.9%), limb swelling, weakness, weight loss and abdominal distension.

The disease was right-sided in 52% and left sided in 46%. The bilateral involvement was found in 5 cases (2%).59.8% had upper outer quadrant involvement followed by central quadrant involvement in 13.6%. The upper inner, lower outer and lower inner involvement were seen in7.9%,2.1%and 2.1% respectively.

The menopausal age ranged from 38-59 years . 37% of

women were premenopausal at the time of presentation which also correlates well with the mean age at diagnosis in this study. However, the most common menopausal age group was between 46-50 years, constituting 15.8%. Thirteen cases were found to have surgical menopause due to some gynaecological problem.

218 cases (92.8%) had ductal carcinoma. The lobular carcinoma was seen in 5(2.1%) cases ,other histologies constituted remaining 7%.Most of the cases belonged to stage III B (29.4%) at presentation followed by stage IV (18.3%) ,stage IIIA (14%). The early stage (Stage I & II) constituted only small proportion of cases (7.2%).The data regarding the hormonal status was available in limited number of patients (23.4%). Almost equal proportion of cases were found to be receptor positive and negative.

Out of 235 patients, only 150(63.8%) patients took some form of treatment, 42 patients (17.9%) only received neoadjuvant chemotherapy and there after defaulted,18(7.7%) patients underwent surgery only. Ninety (38.3%) patients undertook combined modality treatment which included surgery, chemotherapy and radiotherapy. The treatment policy was based upon the stage of the disease and the histopathology.The most commonly used chemotherapy regimen included anthracycline-based; majority receiving Cyclophosphamide, Adriamycin, Fluorouracil regimen(CAF), only few received CMF(Methotrexate) regimen where doxorubicin could not be given. Taxane based chemotherapy was given where disease was progressive after CAF regimen. The most common surgical procedure done was modified radical mastectomy; done in 93.6% of all the operated cases. Breast conservation surgery was done in limited number of cases.The external beam radiotherapy was given to a dose of 45 Gy / 22 fractions / 4.5 weeks to primary and drainage area with a boost of 15 Gy given in breast conservation surgery. Most of the patients were prescribed tamoxifen for 5 years irrespective of hormonal status.

Lung was found to be most common site of distant metastasis, followed by brain. 8 patients had local recurrence whereas 3 patients developed contralateral disease.

Kaplain Meier survival analysis of patients who completed the planned treatment and followed over 18 months period showed that at five months 93.3% of the cases survived disease free(Fig 1). Thereafter there was gradual reduction in the survival so much so that at 9 months it was 81.7%, at 12 months 71.7% and at 18 months 63% of the patients survived disease free.

AGE GROUP (Years)	No. Of Patients	Percentage%
20-30	19	8.0
31-40	61	26.0
41-50	83	35.3
51-60	44	18.7
61-70	24	10.7
71-80	4	1.7
GENDER		
Male	7	3
Female	228	97
PARITY		
0	3	1.5
1-3	93	47.9
4-6	79	40.7
7-9	19	9.8
CLINICAL FEATURES		
Lump	232	98.7
Pain & ulcer in breast	21	9.0
Discharge	18	7.7
Back pain	5	2.1
Cervical lymphadenopathy	4	1.7
Axillary lymphadenopathy	2	0.9
LATERALITY		
Right	122	52
Left	108	46
Bilateral	5	2
QUADRANT		
Upper outer	117	59.8
Upper inner	20	7.9
Lower outer	5	2.1
Lower inner	5	2
Central	32	13.6
HISTOPATHOLOGICAL TYPE		
Ductal Ca	218	92.8
Lobular Ca	5	2.1
Medullary Ca	2	0.9
Others	10	4.2
STAGE AT PRESENTATION		
IB	5	2.1
IIA	12	5.1
IIB	23	9.8
IIIA	33	14.0
IIIB	69	29.4
IIIC	6	2.6
IV	43	18.3

Table 1: Patient characteristics

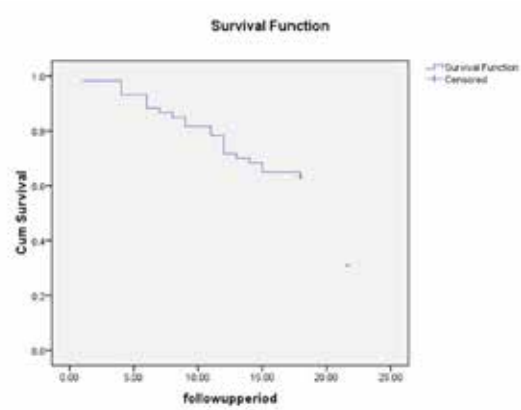

Fig:1 Kaplan Meier curve showing overall survival

DISCUSSION

The aim of this retrospective study was to analyse various epidemiological features and treatment outcome of carcinoma breast at our centre which is one of the major tertiary cancer centres in northern India. The data showed that the maximum number of patients belonged to the age group of 41-50 years (35.3%), mean age being 47.3 years with standard deviation of 11.3 years. But a significant proportion of Indian breast cancer patients are younger than 35 years of age [4,5].The incidence of male breast cancer was around

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3% which is relatively higher than that reported in literature previously [6,7]. A palpable lump was present in about 98.7% of cases, being the most common presenting feature, as reported in various other Asian studies [3,8,9]. 117 patients (59.8%) had upper outer quadrant involvement followed by central (13.6%) quadrant involvement which corroborates with the literature; the possible explanation being more amount of breast tissue in this quadrant.

The positive family history was found only in 2 cases in the first degree relative.The data obtained may not reflect the actual situation because in our scenario most of the patients belonged to low socio economic status and there is lack of awareness and access to medical facilities which may lead to under-reporting of the cases. In one Indian study on 226 breast cancer patients, 20.7% had a positive family history[10]. On the contrary, numerous other studies have reported a low rate of familial breast cancer in Indian patients [11,12]. The most common menopausal age group was 46-50 years constituting 15.8% of women. Late menopause increases the risk of breast cancer. Macmahan et al demonstrated that in comparison to women having menopause between 45-54, women with menopause before 45 have a relative risk of 0.73% and women with menopause after 54 have relative risk of 1.48[13].

The most common stage at presentation was stage III B (29.4%) followed by stage IV (18.3) and stage III A (14%). Early stage constituted a small proportion of cases (7.3%). This is similar to another study where 60%patients had advanced disease.[14] Late diagnosis is a major factor for increased mortality as majority of patients presented in advanced or metastatic stage, as evident from the data above. This is primary attributed to illiteracy, lack of access to medical facility, virtually non-existent breast cancer screening programs, lack of awareness and socio-cultural attitudes. Because in our scenario, the presentation occurred at late stages in most of the cases radical surgery had been done while only few cases were eligible for breast conservation. The proportion of early versus advanced disease in west versus developing countries has been quoted as 4:1 by Rubens et al[15].

The data regarding hormonal status was available in limited number of patients (23.4%). Recent reports from India and Pakistan suggests an important increase in the incidence of breast cancer and specifically ER, PR negative among these population [16].

Out of 235 patients, only 150 patients took some form of treatment. 42 patients only received one or few cycles of neoadjuvant CT and thereafter defaulted. Late diagnosis and incomplete treatment has been found to be primarily responsible for poor outcome in other Indian studies also. Survival analysis of the patients followed over 18 months period showed that five months 93.3% of the cases survived disease free, at 9 months it was 81.7%, at 12 months 71.7% and at 18 months 63% of the patients survived disease free. Raina et al found disease free survival and overall survival at 5 years were 73% and 78% respectively in their study on early breast cancer. Patients with stage I had disease free survival and overall survival of 88% and 91% respectively while for stage IIA were 78% and 82% and for IIB 64% and 72%. Similar data regarding survival in advanced breast cancers is lacking from this region of the country. However a longer follow-up is suggested for better insight to the picture in our study.

Conclusion

Most of the patients of carcinoma breast presented after the age of forty years with painless lump as the most common manifestation.The late presentation was one of the important factor as about half of the cases were stage III or higher. Acceptance of the treatment modality was one of the major limitations` as only half of the cases received treatment that too incomplete which adversely affected the outcome. Therefore early detection and complete treatment are of paramount importance in order to improve the outcome of breast cancer.

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