A Study on Socio Demographic, Clinical Profile and Outcome of Breast Cancer Patients attending Tertiary Cancer Care centre in Gujarat State

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Abstract:

Introduction: Breast cancer is second most common cancer all over the world. Majority of breast cancer cases are registered to hospital at a later stage of cancer presentation. **Objective:** To study sociodemographic, clinical presentation and outcome of Breast cancer patients attending tertiary care centre of Gujarat state. **Method:** This was a retrospective study made up of 5774 patients registered in tertiary care centre of Gujarat state. Data including patient's socio-demographic information like age, marital status, education level and clinical diagnosis including clinical presentation at time of registration, treatment history etc was collected. The data was analysed using MS office 2010 and Epi Info software version 7.0. **Results :** The age ranged between 17-99 years, with a median of 50 years and interquartile range of 42-58 years. There were 62.07% patients presented with locally advanced breast cancer, while 17.57% patients had distant metastasis at diagnosis. Significant association (p<0.05) was found between presentation of disease and literacy status. The overall Kaplan-Meier survival rate at 5 years was 35.8% + 5.0%. Survival rate was consistently declining with increase in clinical extension of disease. **Conclusion:** Majority of patients were in early advanced stage during their first hospital visit which was associated with poor survival. This information may help authorities to focus on early diagnosis of breast cancer.

Key words: Breast cancer, Clinical profile, Socio-Demographic Profile

Introduction:

Breast cancer is second most common cancer all over the world and is one of the leading cancer among women.^[1]It has high prevalence rate in developed as well as developing nations. In 2018, there were estimated over 2 million breast cancer cases.^[2]

Its incidence is rising rapidly in developing world due to change in life style, urbanization, increased life expectancy and influence of western lifestyles. By few preventive approach, risk of breast cancer can be reduced but still this has been inefficient in reducing its incidence in developing countries, as majority of cases are diagnosed at very late stage.^[1]

Even in India, Breast cancer is the most common cancer among females. As per 2012 statistics report, there has been huge surge in Breast Cancer cases in India, it has been most common cancer among females, both in rural and urban areas. In majority of Indian cities, breast cancer has accounted for 25% -32% of overall cancer cases among females.^[3] It is expected that every 4 minutes, a new breast cancer case is reported. As per 2018 breast cancer statistics report, 1,62,468 new cases were registered and 87,090 deaths were registered due to breast cancer.^[4]

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As per Hospital Based Cancer Registry (HBCR) report, the 5 year survival of breast cancer patients is not even 60% in India, as majority of cases visit hospital in late stages.^[3] Aim of this study is to evaluate socio-demographic profile, clinical stage of cancer and outcome of breast cancer patients visiting tertiary care centre.

Method:

A retrospective study of 5774 breast cancer patients visiting tertiary care centre of Gujarat state was carried out. All available case notes and treatment records of cancer patients attended hospital from 2014 to 2016 were retrieved from the Medical Records Department of the hospital. Data including patient's socio-demographic information like age, sex, marital status, education level and clinical diagnosis including clinical extent at time of registration which is equivalent to tumour stage, date of last follow up, death (if any) etc. was included in the study.

Data Capturing: The institute has Indian Council of Medical Research designated Hospital based cancer registry from 2014 with a dedicated data entry operators and medico social workers. Files of confirmed malignancy cases were requisitioned from the medical records department. Social workers were trained by an oncologist for identifying and capturing the relevant patient details. These patient's social and medical parameters were extracted from the file including the clinical notes and radiological imaging records. Data on clinical extent of disease were based on clinical assessment before treatment. The criteria used for coding the clinical extent of disease are as per cancer staging in National Cancer Institute (NCI)^[5] and are hence standardized. They were as follows:

Localized disease - Cancer is limited to the place where it started, with no sign that it has spread; regional-Cancer has spread to nearby lymph nodes, tissues, or organs.

Distant metastasis - Cancer has spread to distant parts of the body. Staging details were verified by an oncologist before entering the data. Patients who could not come for follow-up visits were contacted telephonically to ascertain the current status of the patient's malignancy. In case of no response to the first call, a second phone call was made after a few days. In case of no response to the second phone call, the patient was deemed lost on follow up.

Data Analysis

Patients' baseline characteristics, disease related factors have summarized using descriptive statistics. The categorical parameters have compared using chi-square test. Survival analysis was performed. Occurrence of death was considered as event and 5 year survival curve was calculated using Kaplan-Meier method. All the analysis was performed using MS office 2010 and Epi Info software version 7.0. Prior permission from institutional Scientific Review Committee (SRC) and Ethics committee (EC) was sought before starting the study.

Results:

Out of 5774 patients, majority (32.66%) of patients belong to 41-50 years age group. Median age of patient was 50 years with interquartile range of 42-58 years and range of 17-99 years. 3.8 % breast cancer cases were seen in male patients. 88.14% of study population were following Hindu religion. Around 47% of study population were illiterate, followed by primary education in 29.78%. Only 8.05% of study population had studied diploma or degree courses. Majority of patients were from rural area (79.32%) (Table 1)

All the patients of breast cancer were classified as per clinical extension of cancer at the time of registration. As per table 2, it was found that, 62.07% of patients presented with Regional spread. Cancer was localised in 20.35% cases. Breast cancer was presented in left side of breast in 49.03% and right side presentation was seen in 48.13%.Outcome of patient was considered as per last hospital follow up or telephonic follow-up of registered patients. We could get follow up information of 3705 patients, out of which

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Table 1: Socio demographic characteristic of study population

Variables	Frequency	Percentage					
Age Category (Years)							
< 30	229	3.97					
31-40	1116	19.33					
41-50	1886	32.66					
51-60	1538	26.64					
> 60	1005	17.41					
Total	5774	100					
Gender							
Female	5555	96.21					
Male	219	3.79					
Total	5774	100					
Marital Status							
Married	4899	84.85					
Other	875	15.15					
Total	5774	100					
Religio	n						
Hindu	5089	88.14					
Others	685 11.86						
Total	5774	5774 100					
Educatio	on						
Illiterate	2672	47.34					
Primary	1681	29.78					
Secondary & Higher Secondary	830	14.70					
Degree/Diploma	461	8.16					
Total	5644*	100					
Location							
Urban	1194	20.68					
Rural	4580	79.32					
Total	5774	100					

*Available information was considered for analysis mortality proportion was 42.9%.

There was association between clinical stage of at 1st hospital visit and patient's educational status. Proportion of patients having localised tumour was more in literate patients than illiterate. (Table 3)

We considered only 3705 patients for calculating survival curve as outcome was known only for these

Table 2: Clinical presentation of study cases

Variables	Frequency	Percentage					
Clinical extension of disease							
Localised	513	20.35					
Regional	1565	62.07					
Distant	443	17.57					
Total	2521*	100.00					
Laterality							
Right	2745	48.13					
Left	2816	49.03					
Bilateral	142	2.4					
Total	5703*	100.00					
Outcome							
Death	1589	42.9					
Alive	2116	57.1					
Total	3705*	100.00					

*Available information was considered for analysis

patients. Deaths were considered as events and 5 year survival curve was calculated for different clinical staging of cancer as per clinical extension of disease. As shown in Figure 1, cumulative survival was shown on Y axis and months of survival was shown on X axis. As per Kaplan Meier curve, localised breast cancer patients were having 5 year survival rate of 60.5 ± 10.1 %, whereas it was $42.4\% \pm 6.9\%$ in regional cancer cases. For, Distant Metastatic cancer cases had five year survival rate was $7 \% \pm 6.4\%$. Overall 5 year survival rate was $35.8\% \pm 5\%$.

Discussion:

Morbidity and mortality from breast cancer has reached at concern level at globally. In this study, five thousand seven hundred and seventy-four patients were recruited and the peak age of occurrence was between 41-50 years, median age was 50 years with interquartile range of 42-58 years and range of 17-99 years. Patients younger than 30 years contributed 4% of breast cancer to the study population (Table 1). This finding corroborated with other studies. In study done by Oludare Folajimi Adeyemi et al (2018)^[6] peak age of occurrence was between 41-50 years age group, age range of 23 to 83 years and mean

Educational loval	Clinical extent of disease			
Euucational level	Localised	Regional	Distant	Chi-
Illiterate	232 (18%)	779 (61%)	261 (21%)	square = 18
Primary	162 (22%)	458 (63%)	111 (15%)	n < 0.05
Secondary & Higher Secondary	71 (23%)	192 (63%)	41 (14%)	p < 0.05
Degree/Diploma	35 (23%)	93 (62%)	23 (15%)	

 Table 3: Association between educational level and clinical extent of disease

Figure 1: Five year survival curve as per clinical extent of breast cancer



age of 49 years. Mohite RV et al (2015)^[7] found that maximum cases were in age group 40 to 60 years with mean age 51.46 (SD 7.16) years and age ranges from 38 to 67 years.

Out of total cases, 5555 (96.21%) were female and 219 (3.79%) were male. About 85% were married. This was consistent with Dr Harsha M. Meshram et al $(2016)^{[8]}$ and Aleyamma Mathew et al (2018).^[9]

Out of total cases, 47.37 % cases were illiterate which is high compare with other studies done by Dr. Harsha M. Meshram et al $(2016)^{[8]}$ and done by Mohite RV et al (2015).^[7] In our study, 4580 (79.32%) cases were from rural area and 1194 (20.68%) cases

were from urban area. This finding is consistent with Mohite RV et al (2015)^[7] but Dr. Harsha M. Meshram et al (2016)^[8] found majority cases from urban area. One of the reason of majority of cases from rural area in our study is that, our institute is the only one tertiary care hospital in Gujarat state.

In our study,1565 (62.07%) patients presented with locally advanced breast cancer, while 443 (17.57%)patients had distant metastasisat diagnosis. In another study done by J. D. Kemfang Ngowa et al (2011)^[10], 216 (62.78%) patients hadpresented with locally advanced breast cancer and 28 (8.13%) had metastatic breast cancer. So patients diagnosed with later stages were more in

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our study. This may be due to lack of awareness about disease because majority of patients were illiterate and we found inverse association between patient's literacy status and clinical stage of disease at time of diagnosis.

Out of total patients, we could know outcome of 3705 patients, among them 1589 (42.9%) cases were died and 2116 (57.1%) were alive.

In our study, we have observed, overall 5 year survival rate as $35.8\% \pm 5.0\%$. Survival rate was consistently declining with increase in clinical extension of disease. This finding was consistent with study done by CK Gajalakshmi^[11] et al where overall 5 year survival rate was 47.5%.

Conclusion:

This study shows that majority ofpatients were in early advanced stage during first hospital visit. Literate patients were diagnosed in early stage than illiterate. Poor survival was associated with stages at the time of diagnosis. So health authorities must focus on early diagnosis of disease.

Recommendation:

There is absolute need for increasing health awareness on breast cancer disease, and use of selfbreast examination which can lead to early detection of cancer.

Limitation :

As this was a retrospective hospital based study, a larger proportion of the data had to be loss to follow up which is due to the inherent nature of study design. We could consider it as limitation.

Declaration:

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Conflict of Interest: Nil

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