

Original Research Article

# Prognostic factors in carcinoma breast – A retrospective study

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## Abstract

**Background:** Breast cancer is the most frequent cancer in women globally and represents the second leading cause of cancer death among women.

**Materials and methods:** This study was a retrospective which constituted of 30 cases of breast cancer admitted during the period of 1 year. Investigations were done for confirmation and to know the extent of the disease. Treatment adopted after clinically evaluating and investigating. Post operatively breast with tumor and axillary lymph nodes had been sent for histopathological examination.

**Results:** Incidence of breast carcinoma was highest in the age group of 30-40 years and 51-60 years with 61% of patient in this group. 3.56% patients presented with less than 6 months duration of symptoms. Majority of the patients presented with stage – 2<sup>nd</sup> and stage – 3<sup>rd</sup> diseases constituting 73% of the cases. Majority of patients suffering from carcinoma Breast were multiparous, constituting about 60% of total. The duration of the symptoms varied widely from one month to 2 years, with majority 17 patients presenting before 6 months. 17 patients out of 30 were prenatal with less than 6 months duration of symptoms, constituting 56.1% of cases. 16 out of 30 patients were presented with N 1 lymph nodal metastasis constituting 60% of cases and 8 patients out of 30 were presented without N0 lymph nodal metastasis constituting 26.6%. Type of surgical treatment adopted for the patient was depending on the stage of the disease. Post operative treatment in the form of radiotherapy, chemotherapy and Tamoxifen was given for all patients except for stage – 0 and stage – 1 cancer patients.

**Conclusion:** Good disease free survival rate and overall survival improvement neoadjuvant chemoradiation is to be followed.

## Key words

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Anemia, Diabetes mellitus, Prevalence.

## Introduction

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Cancer starts when cells begin to grow out of control. Cells in nearly in any part of the body can become cancer and can spread to other parts of the body. Breast cancer is a malignant tumour that starts in the cells of breast. A malignant tumour is a group of cancer cells that can grow into surrounding tissues or spread to different areas of the body. The disease occurs almost entirely in women, but men can get it too. The breast is the second commonest site in women which can be affected by cancer. Cancer was the ninth and eighth commonest cause of death in male and female respectively, cancer ranked as the 4<sup>th</sup> leading cause of death in women in the age group of 45 and above. India is going through epidemiologic transition [1]. It is reported that the incidence of breast cancer is rising rapidly in India as a result of changes in reproductive risk factors, dietary habits and increasing life expectancy. The available estimates suggest that approximately 75,000 new cases occur in Indian women every year [2]. This might be a gross underestimate given that there is paucity of information available on incidence, prevalence and other epidemiologic correlates of breast cancer in India. The pooled data from five metropolitan cities indicated that there has been approximately 119% change in the number of Breast cancer cases [3].

Numerous clinical studies have demonstrated statistical relationship between certain prognostic factors and two important intervals in the progression of Breast cancer namely the time from initial diagnosis to the first disease recurrence and the time until death from breast cancer. The major risk factors for breast cancer are age, country of birth and family history. Many other acknowledged risk factors can be traced to reproductive events that influence the lifetime levels of hormones. A recent report identified 41 to 47% of risk to be explained by ones age at the time of first complete pregnancy,

family history [4, 5]. In order to understand the epidemiological correlates, we conducted retrospective study of breast cancer addressing incidence, prevalence, and associated factors like age parity specific focus on diagnosis of nodal staging in study area. After diagnosing and treating breast cancer the cases were followed up for 4 years and survival rate is studied.

## Material and methods

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This study was a retrospective which constituted of 30 cases of breast cancer admitted during the period of 1 year in MNJ Cancer Hospital. Investigations that were done for confirmation and to know the extent of the disease include FNAC of the tumor, complete blood picture, X-ray chest, bone scan in some cases, ultrasound of the abdomen and mammography in from cases. Treatment adopted after clinically evaluating and investigating in the study are surgery alone, surgery + post operative radiotherapy, preoperative chemotherapy (CT) + surgery + post operative radiotherapy (RT) + Tamoxifen or surgery + post operative RT + CT. Post operatively breast with tumour and axillary lymph nodes have been sent for histopathological examination. Type of treatment was adopted on the stage of the disease and menopausal status.

## Results

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Peak age incidence of breast cancer was in the age group of 31–40 and 51–60 years. 18 out of 30 cases were in the age group 31–40 and 51–60 years, constituting 61% of cases (**Table – 1**). Majority of patients suffering from carcinoma breast were multiparous, constituting about 60% of total and least common were nulliparous, constituting about 16.6%.

Most of the patients were with stage – 2<sup>nd</sup> and 3<sup>rd</sup> disease constituting 73% of the cases. Duration of the symptoms varied widely from one month to 2 years, with majority 17 patients presenting before 6 months. 17 patients out of 30 were

prenatal with less than 6 months duration of symptoms, constituting 56.1% of cases (**Table – 2**).

16 Out of 30 patients were presented with N 1 Lymph nodal metastasis constituting 60% of cases and 8 patients out of 30 were presented without N0 lymph nodal metastasis constituting 26.6%. Type of surgical treatment adopted for the patient was depending on the stage of the disease. Post operative treatment in the form of radiotherapy, chemo-therapy and Tamoxifen is given for all patients except for stage – 0 and stage – 1 cancer patients (**Table – 3**).

**Table - 1:** Age and parity distribution.

Age group	No. of patients	%
20-30	2	6.6
31-40	9	30.6
41-50	8	20.6
51-60	9	30.6
61 years and above	2	6.6
<b>Parity</b>		
Uniparous	7	23.3
Multiparous	18	60.0
Nulliparous	5	16.6

**Table - 2:** Duration of symptoms and stages of tumor.

Duration in months	No. of patients	%
Less than 6 months	17	56.1
6 months – 1 year	8	30
1 year and above	4	13.33
<b>Stages of tumor</b>		
Stage-0	2	6.66
Stage-1	2	6.66
Stage-2	11	36.63
Stage-3	11	36.63
Stage-3A	11	36.63
Stage-3B	2	6.66
Stage-4	2	6.66

Average survival was 4 years 1 month. In this study the maximum follow up is 6 years 2 months and patient is living with disease. Average survival for stage – 2 cases was 4 years 2 months and stage – 4 cases was 1 year 1 month so survival was decreasing as the stage of the disease advances. Average survival was less in younger and older patients compared to the middle aged. Average survival was more for patient with T 0 disease than the patient with T 3 or T 4 disease. Survival was more for patients with N 1 disease than for patient with N 2 disease (**Table – 4**).

**Table - 3:** Lymph nodal metastases and type of surgical treatment adopted in the study.

Lymph nodal metastasis	No. of cases	%
N0	8	26.6
N1	16	60.0
N2	4	13.33
<b>Type of surgical treatment</b>		
Patey’s mastectomy	26	86.58
Total mastectomy	3	10.00
Axillary sampling	---	---
Toilet mastectomy	1	3.33

## Discussion

Present study incidence was highest in the age group of 30-40 years and 51-60 years with 61% of patient in this group whereas one of the largest studies by Erlandsson G, et al. [6] reported to the found the most favourable prognosis in the 35-49 age group and poorest in patient older than 75 years and younger than 34 years. In study done by Giridhara Rathnaiah Babu, et al. [7] incidence was highest in the age group of 30-40 years and 51-60 years with 61% of patient in this group. The breast cancer cases attained a late age of menopause as compared to the controls. The risk increased in women having a menopause after 49 years [8]. Other studies have also reported increase in risk with late age at menopause [9]. The report in Lancet by Rajesh Dikshit, et al. [10] states, “In women aged 30-69 years, breast cancer affects 10-2% of all cancer mortalities”.

This article also mentions that in women, breast cancer mortality was similar in rural and urban India. Breast cancer is probable to be diagnosed at earlier stages in urban women than in rural women and consequently more treatable.

**Table – 4:** Stage of tumor, Age, Parity, Size of tumor and lymph node metastasis with survival period.

Stage	No. of cases	Average survival
<b>Stage of tumor of presentation overall and survival</b>		
1	1	5 years 4 months
2	4	3 years 4 months
3 – A	4	4 years 6 months
3 – B	2	2 years 2 months
4	1	1 year 1 month
<b>Age related survival</b>		
<b>Age group (years)</b>		
20 – 30	1	4 years 9 months
31 – 40	4	3 years 5 months
41 – 50	3	5 years 2 months
51 – 60	3	5 years 5 months
61 – 70	3	1 years 5 months
<b>Parity related survival</b>		
Uniparous	1	3 years 1 month
Multiparous	9	4 years 5 month
Nulliparous	2	2 years 4 month
<b>Size of the tumor and survival</b>		
T 0	1	5 years 9 Months
T 1	1	5 years 4 Months
T 2	3	5 years 2 Months
T 3	4	3 years 7 Months
T 4	3	1 year 1 Months
<b>Lymph nodal metastasis and survival</b>		
N 0	4	3 years 4 months
N 1	5	5 years 2 months
N 2	3	2 years 8 months

Prognosis was good in multiparous women than the nulliparous women i.e. average survival 4 years 5 months in multipara and 2 years 4 months in nulliparous pattern. Parity was not found to be significantly related to the risk of

breast cancer in Sweeney C, et al. [11] study. However, results of earlier studies have reported a decrease in risk with higher parity [12, 13]. Nearly 1.9% of the cases were nulliparous. Earlier studies have reported that nulliparity is a risk factor for breast cancer [14, 15, 16]. 3.56% patients presented with less than 6 months duration of symptoms. Majority of the patients presented with stage – 2<sup>nd</sup> and stage – 3<sup>rd</sup> disease i.e. locoregionally advanced disease. 5.73% patients presented with lymph nodal metastases. Maximum follow-up in this study was 6 years 2 months for T 3 N1 M X who is giving with local recurrence. In one case of stage – 1 disease which was treated with surgery with adjuvant Tamoxifen, survived for 5 years 4 months. In 4 cases of stage – 2<sup>nd</sup> disease which were treated with surgery and adjuvant therapy maximum survival was 5 years and average survival was 3 years 11 months. In 6 cases of stage – 3<sup>rd</sup> disease treated with surgery followed by chemotherapy maximum survival was 3 years 2 months and average survival was 2 years 1 months. In this study survival was poor in older age group than middle aged group patients, which is in conformity with the other studies. In this study survival was dependent mainly on the tumour size and lymph nodal metastasis. For T 1 – Tumors measuring 2 cm or less than 2 cm in diameter the average survival was 5 years 4 months where as T 4 (Tumour measuring more than 10 cm or involvement of skin or chest wall ) patient the average survival was one year one month. For N1 cases the average survival is 5 years 2 months and for N2 cases the average survival was 2 years 8 months. Several studies reported that for Node positive patients. Receptor status of tumour was not done because of high cost.

Giridhara Rathnaiah Babu, et al. [7] study findings showed that the women several regions of South India present predominately at either stage III and IV. Stage at diagnosis is an important determinant of the overall survival rates. Average 50% of breast cancer cases in India are presented at late stage (stage III and IV) (Chopra, 2001) [3]. It is very important when

women with breast cancer are aware of their disease and how early the treatment can be given. In developed countries like the United states, only 12% of the breast cancer cases are diagnosed at an advanced stage (Goel, et al., 1995) [17].

Screening – Prognosis of breast cancer is closely related to stage at diagnosis and breast screening by mammography of women over the age of 50 will reduce cause specific mortality by up to 30%. Radiotherapy was given to patients with advanced breast cancer in divided dose with fraction of about 300CGY with total dose of 4000 rads. The chemotherapeutic agents were CMF (cyclophosphamide + Methotrexate 5 flourouracid) regimen for older patient and CAF (Cyclophorplamide + Adriamycin + 5 flourouracid) regimen for younger age patients. The results were better with CAF regimen. Post Menopausal cancer patients who were kept on tamorifen adjuvant chemotherapy have better survival. The local recurrence after definitive treatment was treated by chemo/ radiation.

Understanding the previous studies on incidence and prevalence of breast cancer due to various factors helps understand in detail the modifiable risk factors. Primordial prevention can be advocated at the community level to educate the women about breast cancer, ways of dealing with it. In conclusion, in summary, the study infers to adopt primordial prevention strategies to address the increasing incidence of breast cancer among women Educational strategies should be aimed modifying the life style, early planning of pregnancy, Screening – Prognosis of breast cancer is closely related to stage at diagnosis and breast screening by mammography of women over the age of 50 will reduce cause specific mortality by up to 30%.

## Conclusion

In present study, highest incidence of carcinoma breast was in age groups of 30-40 and 51-60 years accounting 61%, were favourable prognosis was with 35-49 years age group were

as age decreased prognosis. Prognosis is better in multiparous women than in nulliparous. Majority of cases are diagnosed at stage-2 and stage-3 disease. Tumor with negative nodes has better survival than positive nodes. Survival is good in stage-1 and survival improved with Neo Adjuvant chemoradiation. To get a with good disease free survival rate and overall survival improvement neoadjuvant chemoradiation is to be followed.

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