



## CLINICOPATHOLOGICAL AND SURVIVAL OUTCOME ANALYSIS IN MALE BREAST CARCINOMA: SINGLE INSTITUTIONAL EXPERIENCE

### Oncology

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### ABSTRACT

**Aim:** Male breast cancer is a rare disease and accounts for <1% of all breast cancers worldwide. There is limited data on male breast cancer from India. Rarity of disease and scarcity of data prompted us to carry out retrospective study with the aim to observe the clinical and pathological features, evaluate the prognostic factors and to co-relate the outcome. **Materials and methods:** A 7 year (2010-2016) retrospective study of all male breast cancers patients registered at Bhagwan Mahaveer Cancer Hospital and Research Center Jaipur was done. Data regarding the incidence, presentation, histopathology, stage & grade of tumor, management and outcome of patients were analyzed. **Results:** 32 cases of male breast cancer were encountered. This comprised 0.47 % of all breast cancers seen in our department. The median age was 62 years. The median duration of symptoms was 3.5 months. Breast lump was the most common presenting symptom. Left side was more commonly involved than right breast. Stage distribution was Stage I-31%, Stage II-37.5 %, and Stage III-31% while none presented as metastatic disease. Four patient received neoadjuvant chemotherapy. Thirty one patients were infiltrative ductal carcinoma, while 1 was lobular carcinoma. Moreover, 50% had pathological node positive disease. ER/PR & HER2/neu positivity was 87.5% and 12.5 %, respectively. Triple negative breast cancer constituted 12.5 % of cases. With the median follow up of 36 months, 4 patient experienced recurrence in form of distant metastasis. Of these, 3 patients succumbed to the disease. Five years disease free survival and overall survival was 94% and 90.6 % respectively. **Conclusion:** Male breast cancer constituted 0.47% of all breast cancer at our institute. Our study population had early disease at presentation; majorities were hormone receptor positive. Hormone status negativity and nodal involvement at baseline predicted poor outcome.

### KEYWORDS

Male Breast, carcinoma, Clinicopathological

Male breast cancer (MBC) is a rare disease and accounts for <1% of all breast cancers worldwide<sup>1</sup>. Estimated risk of getting breast cancer is about 1 in 1000 men. Incidence of male breast cancer has increased by 26% over past 25 years .Although rare, breast cancer (BC) affects men's health and quality of life. The present study showed that the mean age of MBC patients was about 60–65 years old<sup>2,3</sup>. However, this disease may develop in a wide range of ages. For example, the youngest MBC patient was 9 years old and the oldest was above 90 year<sup>1,4</sup>.

Male Breast cancer is common in the elderly males in the sixth to seventh decade of life. The mean age of presentation is 67 years, which is approximately 5–10 years older than that in females. Family history of first-degree relatives, single marital status, previous benign disease of the breast, and history of previous chest wall irradiation are the potential risk factors that have been attributed to MBC. Smoking, alcohol consumption, obesity, hormonal therapy, and liver disease causing hyperestrogenism, and gynecomastia have been implicated as additional possible risk factors<sup>5</sup>. There is limited data on male breast cancer from India. Rarity of disease and scarcity of data prompted us to carry out retrospective study.

#### Objective

- With the aim to observe the clinical and pathological features, evaluate the prognostic factors and to co-relate the outcome.

#### Material and Methods

- A 7 year (2010-2016) retrospective study of all male breast cancers patients registered at BMCHRC, Jaipur was done.
- Data regarding the incidence, presentation histopathology, stage & grade of tumor, management and outcome of patients were analyzed.

- All groups were analysed statistically with chi square and paired t – test.
- p-value < 0.05 was taken as significant.
- Med calc 16.4 version software was used for statistical analysis.
- 32 cases of male breast cancer were encountered

#### Results

The total 32 cases were analyzed in present study. Table 1 depicts majority of patients belongs to age group 40 to 78 years of age among them 2 % have family history of male breast cancer. Clinical profile of patients showed Laterality in 68.75%, Duration of symptoms is 3.5 month. The chief complaint was Lump in 87.5% and clinical node in 18.75% patients. The maximum 37.5% patients had IInd stage of cancer followed by Ist stage 31.25% and IIIrd stage in 31.25%. The histopathological profile of patients was IDC in 31 patients, HR+ in 26 patients, TNBC (Triple negative) in 4 and HER2/New+ in 6 patients. The treatment pattern for patients included in present study was Neoadjuvant chemotherapy in 4 patients, Adjuvant chemotherapy in 29 patients, Adjuvant Radiotherapy in 18 patients and Adjuvant hormonal therapy in 26 patients. The present study also analyzed recurrence pattern and the study showed no local recurrence, Distant metasis in 4 patients and Death were reported in 3 patients among total case analyzed in the study. ( Table 1)

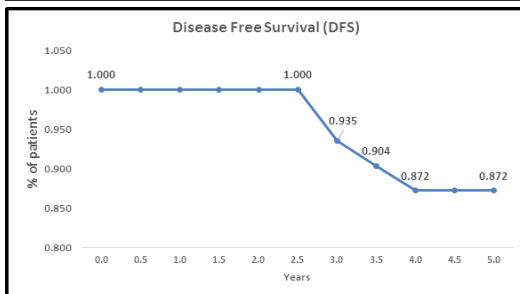
The present also evaluates survival outcome of male breast cancer. The DFS rate was good in 26 patients with diagnosed with HR+ followed by diagnose early stage in 25 patients. Poor DFS rate was in patients with TNBC only in 4 patients. High OS rate seen in patients diagnosed with PNo and early stage carcinoma of male breast in the study. The study also depicted DFS and OS are reduced in 5 years ( Table 2) ( Fig 1 & 2)

**Table 1 -Clinical & Pathological Profile of Male Breast Cancer Patients**

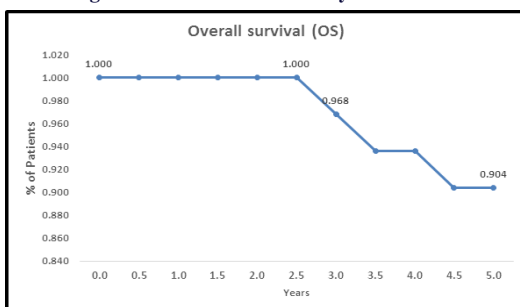
Factors	Distribution
<b>Demographic profile</b>	
Age	62 years(40-78 yrs)
Family history	2 (6.25%)
<b>Clinical profile</b>	
Laterality	Left 22/32 (68.75%)
Duration of symptoms	3.5 Months
Chief complain	Lump 28/32 (87.5%)
Clinical node	16/32 (50%)
<b>Histopathological Profile</b>	
Pathology	IDC 31/32 (96.87%)
HR+	26/32 (81.25%)
TNBC	4/32 (12.5%)
Her2/Neu+	6/32 (18.75%)
<b>Pathological stage</b>	
I	10 (31.25%)
II	12 (37.5%)
III	10 (31.25%)
IV	0
<b>Treatment</b>	
Neoadjuvant Chemotherapy	4 (12.5%)
Adjuvant Chemotherapy	29/32 (90.62%)
Adjuvant Radiotherapy	18/32 (56.25%)
Adjuvant Hormonal therapy	26/32 (81.25%)
<b>Recurrence Pattern</b>	
Local recurrence	0/32
Distant metastasis	4/32 (12.5%)
<b>Death</b>	3/32 (9.37%)

**Table 2-Survival outcome of male breast cancer patients**

	No.of pt	DFS	p (DFS)	O.S.	p(OS)
pNo	18	94%	<0.001	100%	NS
pN+	14	71%		79%	
Early stage	25	96%		100%	NS
Locally Adv	7	57%		43%	
HR+	26	96%		96%	NS
TNBC	4	25%	<0.001	50%	
All patients	32	84%		90.6%	-



**Fig 1. Showing Disease Free Survival at 5 years**



**Fig 2. Showing actuarial overall survival at 5 years**

**DISCUSSION**

The aim of this retrospective study was to study the incidence of male breast cancer at a tertiary care hospital. We came across 32 male breast cancer patients. Because of the delay in the diagnosis and loss of the social male-specific information, an increased trend in male breast cancer mortality rates has emerged. At the present time, the management and treatment of MBC is based on guidelines developed for women. It is known that FBC( Female breast cancer) and MBC ( Male Breast Cancer) differ biologically. For example, the levels of hormone receptors in malignant tumors of the male mammary gland are higher than in malignant female breast tumors on average. The presence of receptor-positive tumors in men does not increase with the age, as is observed in FBC. It is necessary to use optimized therapeutic approaches for the treatment of breast cancer in both sexes. Therefore, research on male breast cancer is needed to further promote treatment and prevention<sup>1,6</sup>.

Our study evaluated 32 cases retrospectively and found that majority of patients (62%) belongs to age group 40 to 78 years of age among them 2 % have family history of male breast cancer.

The study conducted by Sharma JD et al<sup>7</sup>, They have evaluated 60

patient retrospectively of male breast Cancer an found that, the median age of presentation was 50 years which is near similar finding as compare with present study. The Left and right breast were almost equally affected (51.6% vs 48.4%). Most of the patients presented in advanced stage in study by sharma JD et al.

The Sharma JD et al also showed About 80% (48) patients had nodal metastasis and 18.3% had distant metastasis at presentation. Hormone receptor and human epidermal growth factor receptor 2 (HER2)/neu was found to be positive in 53.3% and 15%, respectively. Triple negative breast cancer constituted 18.3% of cases. However, present study found that The histopathological profile of patients was IDC in 31 patients, HR+ in 26 patients, TNBC (Triple negative) in 4 and HER2/New+ in 6 patients.

The Retrospective study by Chaithanya Babu et al<sup>8</sup> analyzed total of 27 male breast lumps and 189 female breast cancer patients were . The mean age of presentation being 48.5 years. Other types include ductal carcinoma insitu 8 cases (4.19%), 6 cases (3.14%) of infiltrating ductal carcinoma of medullary type. 5 cases (2.62%) were of invasive lobular type and 2 cases (1.05%) were of Paget's disease of nipple. Both the male breast cancer patient's specimens were negative for lymph nodes and were hormone receptor positive. Adjuvant chemotherapy and Tamoxifen were offered to them. The present study found that, Clinical profile of patients showed Laterality in 68.75%, Duration of symptoms is 3.5 month. The chief complaint was Lump in 87.5% and clinical node in 18.75% patients. The maximum 37.5% patients had IInd stage of cancer followed by Ist stage 31.25% and IIIrd stage in 31.25%. The treatment pattern for patients included in present study was Neoadjuvant chemotherapy in 4 patients, Adjuvant chemotherapy in 29 patients, Adjuvant Radiotherapy in 18 patients and Adjuvant hormonal therapy in 26 patients. The present study also analyzed recurrence pattern and the study showed no local recurrence, distant metasis in 4 patients and Death were reported in 3 patients. The present study showed some more data in male breast carcinoma as compare with those previous study by Shirma and chaithanya et al study. The present study highlighted the duration of symptoms of patient, treatment pattern of male breast cancer also showed recurrence of cancer in male patients. Our study might provide insights into a better understanding of MBC and further promote its treatment and prevention.

**CONCLUSION**

Male breast cancer constituted 0.47% of all breast cancer at our institute. Our study population had early disease at presentation; majorities were hormone receptor positive. Hormone status negativity and nodal involvement at baseline predicted poor outcome.

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