

# Male breast cancer: A retrospective review of clinical profile from a tertiary cancer care center of India

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## Abstract

**Aim:** Present study was done with an aim to analyse the clinicopathological and survival characteristics of male breast cancer patients. **Methods:** We did a retrospective review of our database and analysed total 27 patients who presented to breast oncology unit of Rajiv Gandhi cancer centre and research institute from January 2010 to April 2016. **Results:** Most common stage at presentation in our study was in stage II. The median follow up was 32.75 months. The actuarial 5-year survival was 92.30% and DFS was 76.30%. Only hormone receptor status was found as a significant prognostic variable among the prognostic factors studied for disease free survival. **Conclusions:** Carcinoma breast in male is a relatively rare disease and management principles are translated from our understanding of breast cancer in women. A relatively early stage at presentation is a contrasting finding of our series which may be responsible for a significantly better actuarial 5 year survival rates.

**Key words:** Hormone receptor, India, Male breast cancer, triple negative breast cancer

## Introduction

Breast cancer is the leading malignancy all around the globe among women, but it is uncommon in men. Breast cancer accounts for <1% of all cancer in male with estimated lifetime risk of getting breast cancer is about 1 in 1000 in men.<sup>[1,2]</sup> Incidence of male breast cancer has increased by 26% over the past 25 years.<sup>[3]</sup> Literature pertaining to male breast cancer is sparse, particularly in our country.<sup>[4-11]</sup> The present study was done with an aim to analyze the clinicopathological and survival characteristics of male breast cancer patients.

## Methods

We analyzed clinico-pathological, management and follow up details retrospectively from 2010 to 2016. Continuous variables were presented as mean  $\pm$  standard deviation and median. Kaplan–Meier survival analysis was used to find out overall survival (OS) and disease-free survival (DFS), and log-rank test was used to calculate *P* value. The analysis was done using the Statistical Package for Social Sciences 21.0 (SPSS Version 21.0).

## Results

Total 27 patients were identified. The majority of the patients were from Delhi (13/27). No risk factor identified except family history in two cases. Clinicopathological details are depicted in Table 1. Most common location was central quadrant (16/27), followed by upper outer quadrant (4/27). Most common stage at presentation was Stage II.

All patients underwent modified radical mastectomy upfront. Infiltrating ductal carcinoma found in 85.2% cases followed by infiltrating lobular carcinoma and infiltrating mucinous carcinoma in two patients each. 77.8% were hormone receptor (HR) positive while 18.5% were triple negative.

Prolonged drain output seen in three patients while one developed wound dehiscence. Two patients developed arm edema, and both of them had received adjuvant radiotherapy.

**Table 1: Clinical and pathological profile of male breast cancer patients**

Factor	Distribution
Demographic profile	
Age (year)	62.6 (46-77)
Comorbidities	12/27 (44.3%)
Family History	2/27 (7.04%)
Clinical profile	
Laterality	Right 16/27 (58.8%)
Location	CQ in 16/27 (58.8%)
Duration of symptoms	4.5 months (1-12)
Chief complains	Lump 24/27 (88.8%)
Mean size of lump	3.09 cm (1-7 cm)
Clinical node+	9/27 (33.3%)
Histopathological profile	
Pathology	IDC 23/27 (85.2%)
HR+	21/27 (77.8%)
TNBC	5/27 (18.5%)
TPBC	1/27 (3.7%)
Her2/Neu+	2/27 (7.4%)
Pathological staging	
T1	6 (22.2%)
T2	15 (55.6%)
T3	4 (14.8%)
T4	2 (7.4%)
N0	18 (66.7%)
N1	7 (25.9%)
N2	1 (3.7%)
N3	1 (3.7%)
Stage I	5 (18.5%)
Stage II	18 (66.7%)
Stage III	4 (14.8%)
Stage IV	0 (0%)
Adjuvant Management	
Adjuvant chemo	19/27 (70.4%)
Adjuvant Radio	6/27 (22.2%)
Adjuvant HT	21/27 (77.8%)
Recurrence pattern	
Local recurrence	3/27 (11.1%)
Mean duration	
Distant recurrence	2/27 (7.4%)
Mean duration	

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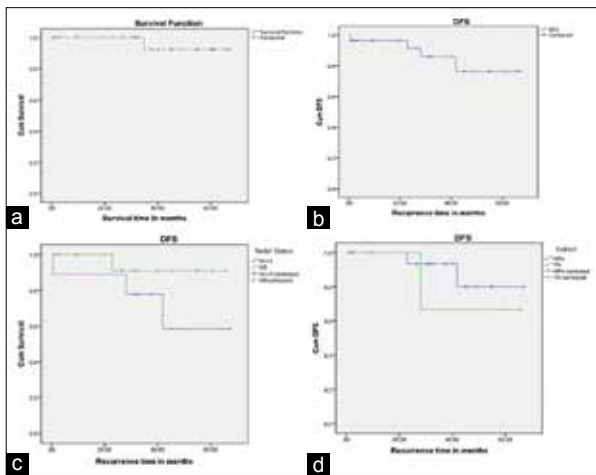
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**Table 2: Survival outcomes of male breast cancer patients**

	Number of patients	Disease free survival	P (DFS)	Overall survival	P (OS)
pN0	18	85.70%	S (<0.05)	100%	NS
pN+	9	58.3%		85.7%	
Early stage	23	100%	NS	100%	NS
Locally advanced	4	69.39%		90%	
HR+ve	21	80.00%	S (<0.05)	100	NS
TNBC	5	66.67%		90.00%	
All patients	27	76.30%	-	92.30%	-

**Table 3: Review of Indian series on male breast cancer. \*P stage also shown to significant prognostic variable for overall survival †median OS for stage 1, 2, 3 and 4: 36.2, 32.9, 14.2 and 5.46 months respectively**

Study	Duration	Female to male ratio	Patients	Laterality	Family history	Study place	Age	Delay in presentation	Commonest stage	HR+	Prognostic variables for DFS	Survival
Shukla et al. <sup>[6]</sup> 1996	1987-1993	-	41	Left (58.5)	2%	Delhi	54.2	15.1 mon	41% stage 3	43%	pN stage. Age <50 yr	91.4% 4 Y OS
Mitra et al. <sup>[7]</sup> 2007	1994-2003	-	79	-	-	Kolkata	67	-	90% stage 3/4	83%	pN stage	47-58% 5 Y DFS
Chikaraddi et al. <sup>[8]</sup> 2012	2001-2010	0.4%	26	Right (61%)	-	Bangalore	57	-	50% stage 3	81%	-	-
Shah et al. <sup>[9]</sup> 2009	1987-2007	4.1%	32	-	3%	Kashmir	55	3 mon	56.2% stage 3	62.5%	-	-
Rai et al. <sup>[10]</sup> 2005	1996-2000	0.5%	30	-	-	Chandigarh	56	-	43.3% stage 3	-	pN stage	40% 5 Y DFS
Mukherjee et al. <sup>[11]</sup> 2014	2003-2009	-	33	Right (63%)	6%	Kolkata	60	-	57.6 stage 3	54.5%	p Stage. Also OS*	†
Sundriyal et al. <sup>[12]</sup> 2015	2005-2014	1.03%	18	Right (55%)	-	Delhi	60	-	61% stage 4	94%	-	-
Gogia et al. <sup>[13]</sup> 2015	1996-2012	-	76	-	9.2%	Delhi	59	-	59% stage 3	78%	pN stage	80%. OS 3 year
Present study 2016	2010-2016	0.8%	27	Right (59%)	7%	Delhi	62.6	4 mon	66.7% stage 2	78%	HR status	92.3% OS 5 yr. 76.3% DFS 5 yr



**Figure 1: Showing actuarial survival at 5 years: Overall Survival (Panel: A), Disease free survival (Panel: B), Disease free survival (DFS) in relation to nodal (Panel: C) and hormonal status (Panel: D).**

Nineteen patients received adjuvant chemotherapy while six received adjuvant radiotherapy. Two patients received both form of adjuvant treatment. All patients with HR positivity received adjuvant tamoxifen.

Median duration of follow-up was 32.75 months (6–66 months). Three patients developed local recurrence (1 chest wall and 2 ipsilateral axillae). Two patients developed distant metastasis (lung and bone). At the past follow-up, one patient with metastasis died of the disease. Actuarial OS at 5 years

was 92.30% with median DFS was 76.30%. Triple-negative breast cancer (TNBC) and HR-negative status associated with poor DFS; however, there was no significant difference in OS [Figure 1 and Table 2].

**Discussion**

Breast cancer is the most common malignancy among Indian women but its uncommon in men.<sup>[1,2]</sup> We have summarized the data on available Indian series on male breast cancer [Table 3].<sup>[4-11]</sup> Clinical and demographic finding are in concordance with the reported Indian series. Most studies show that male breast cancer presents in an advanced stage while most of our patients were in early stage. The reason may be due to the growing cancer awareness in a metro city such as Delhi as >60% of our patients were from Delhi.

Several Western series have reported 5 years OS 80%–90% in Stage I, 50%–80% in Stage II, 30%–50% in Stage III, and <10% in Stage IV disease.<sup>[12,13]</sup> Staging, nodal status, and HR+ have been reported as prognostic variables for OS and DFS. On univariate analysis, OS was poor in advanced stage, N+ and TNBC cases, but did not reach statistical significance. DFS was adversely affected by T stage and nodal status, but the difference did not reach significance, which may be because of small sample size. HR positivity associated with significantly improved DFS. These results may be not true picture as our study has small sample size and relatively less number of patients in advanced stage disease.

## Conclusion

Carcinoma breast in male management principles are translated from our understanding of breast cancer in women. The prognosis is dependent on stage of the disease and HR status. Most of the analysis in our study was in concordance with the available data except the stage at presentation. In our study, the predominant stage at presentation was Stage II. This may be due to raising awareness among the population in the metro cities, which is a welcome trend.

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## Conflicts of interest

There are no conflicts of interest.

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