Original Research Article

Clinico-pathological profile of female breast cancer in Kashmir: an institutional experience

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ABSTRACT

Background: Breast cancer is the most common cancer among women and one of the most important causes of death among them. The present study tries to evaluate the demographic, clinical, and pathological profile of female breast cancer patients in Kashmir

Methods: This study was done in government medical college Srinagar, department of radiation oncology. A retrospective review of 84 patients of breast cancer treated between January 2021 and March 2023 was done.

Results: A total of 84 patients were taken for this study. Most patients presented in the 4th and 5th decade of life with a mean age of 45.5± 8.58. 50% of the patients were having T2 followed by 19.04% having T4 and 16.66% having T1 while 14.28 % had T3 stage. 32.1% of patients were having N0 nodal status, 25.0% were having N3 followed by 23.80% had N1 and 19.04% had N2 nodal disease.52.38% were having stage II and 36.90% were having stage III and 4.76% were having stage IV. 85.71% were having invasive ductal carcinoma, 9.52% were having invasive lobular carcinoma and 4.76% were having medullary carcinoma. 23.80% of patients were Triple +, 27.38 % of patients were Triple Negative, 25.0% were ER+/ PR+.

Conclusions: The incidence of female breast cancer was more in the age group of 41–50 years. Stage II was more followed by Stage III. The most common histopathology type was invasive ductal carcinoma. Triple negativity was seen more in our patients.

Keywords: Breast carcinoma, Clinico-pathological profile, TNM

INTRODUCTION

According to Globocan 2020, female breast cancer is the most common cancer worldwide and there are 2.3 million new cases which represent 11.7% of all cancer cases followed by lung cancer (11.4%) and colorectal cancer (10.0%). Worldwide, breast cancer is the fifth most common cause of cancer death and there are 685,000 deaths in 2020.[1] As per the Globocan data 2020, in India, breast cancer accounted for 13.5% (178361) of all cancer cases and 10.6% (90408) of all deaths with a cumulative risk of 2.81%.[2] India is a vast country with various cultures and different lifestyles. In Kashmir, it is the commonest malignancy in females and constitutes approximately 17%

of all cancers.[3] Although the incidence rate of breast cancer is known to vary from region to region, the common risk factors are early menarche, delayed menopause, null parity, delayed first childbirth, family history of breast cancer, lack of breastfeeding practice, obesity, tobacco and alcohol consumption, and high-fat high-calorie diet.[4]

The pathology of carcinoma of the breast is complex and involves factors such as age, genetics, lifestyle changes, tumour size, involvement of axillary nodes, histologic grade, and hormonal receptor status, which help in guiding the therapy and determining the prognosis of the patient. Besides, this knowledge about the clinical-pathological profile also serves as the foundation for the planning of

further research.[5,6] This study was undertaken to document the clinical-pathological characteristics of female breast cancer at our institute.

METHODS

A retrospective review of a prospectively maintained database of 100 patients of breast cancer treated in the department of radiation oncology, government medical college, Srinagar between January 2021 and March 2023 was done. Out of which,84 patients were taken for this study.

Inclusion and exclusion criteria

Inclusion criteria was histologically confirmed breast cancer patients with complete treatment details and known hormone status whereas, the patients with incomplete records (missing information on stage, HER2/neu or hormone receptor status) and male breast carcinoma were excluded.

This was a retrospective study. Data was collected from medical records file of patients about their demographic profile, clinico-pathological characteristics, IHCEstrogen/progesterone receptors (ER/PR), and HER2/neu status. The staging of breast cancer was done according to American joint committee on cancer TNM staging system (8th Edition).[7] Patients received neo-adjuvant/adjuvant chemotherapy, surgery, external beam radiotherapy, hormone therapy, trastuzumab according to their stage, histopathological profile, and ER/PR and HER2/neu status. Statistical Analysis was done using SPSS version 25. Continuous variables were reported as mean±SD and categorical variables were reported as percentages.

RESULTS

Demographic and clinical profile

A total of 84 patients were taken for this study. Most patients presented in the 4th and 5th decade of life with a mean age of 45.5±8.58 .95.23% of females were married while 4.6% were unmarried. Among the married subjects, 83.33% were multiparous and 4.76% were Nulliparous, 48.8% were perimenopausal and 40.47% were menopausal (Table 1).

50% of the patients were having T2 followed by 19.04% having T4 and 16.66% having T1 while as 14.28 % having T3 stage'. The majority of patients were having N0 (32.1%) nodal status, 25.0% were having N3 followed by 23.80% had N1 and 19.04% had N2 nodal disease. 52.38% were having stage II and 36.90% were having stage III and 4.76% were having stage IV and 5.95% were having stage I 85.71% were having invasive ductal carcinoma, 9.52% were having invasive lobular carcinoma and 4.76% were having medullary carcinoma as histology (Table 2).

Table 1: Demographic characteristics of patients with breast carcinoma.

Variables	N	%
Age (years)		
<35	12	14.28
35-45	25	29.76
46-55	15	17.85
>56	32	38.09
Mean	45.5±8.58	
Marital status		
Married	80	95.23
Un married	4	4.76
Parity		
Nulliparous	4	4.76
Parity One	10	11.90
Multiparous	70	83.33
Menstrual status		
Fertile	9	10.71
Perimenopausal	41	48.80
Menopausal	34	40.47
Occupation		
Housewife	72	85.71
Employed	12	14.28

Table 2: Clinico-pathological profile.

Variables	N	%
TNM staging		
T stage		
T1	14	16.66
T2	42	50
T3	12	14.28
T4	16	19.04
N stage		
N0	27	32.1
N1	20	23.80
N2	16	19.04
N3	21	25.0
M	4	4.76
Staging		
I	5	5.95
II	44	52.38
III	31	36.90
IV	4	4.76
Histological type		
Invasive ductal carcinoma	72	85.71
Medullary carcinoma	4	4.76
Metaplastic	0	0
Invasive lobular carcinoma	8	9.52

It is depicted through (Table 3) that the treatment received by the patients enrolled in the study. The majority of the patients underwent mastectomy (73.80%) while breast conservation was done in 26.19% of patients. For axillary staging, 3.57% of patients had sentinel lymph node biopsy, and 96.4% underwent axillary lymph node dissection. 19.04% of patients received neoadjuvant

chemotherapy while 80.95% received adjuvant chemotherapy. 4.76% of patients developed Mets.

Table 3: Treatment details.

Variables	N	%
Treatment		
Breast surgery		
No surgery	0	0
Breast conservative surgery	22	26.19
Modified radical mastectomy	62	73.80
Axillary surgery		
Axillary dissection	81	96.4
No dissection	3	3.57
Chemotherapy		
Neoadjuvant	16	19.04
Adjuvant	68	80.95
Radiation	84	100

The IHC status of the patients in this study is shown in (Table 4). 23.80% of patients were ER+/PR+/HER2/neu+(Triple Positive), 27.38% patients were ER-/PR-/HER2/neu-(Triple Negative), 25.0% were ER+/PR+/HER2/neu-, 16.66% patients were ER-/PR-/HER2/neu+, 1.19% were ER+/PR-/HER2/neu, 2.38% were ER-/PR+/HER2/neu- and 3.57% were ER+/pr/HER2neu+.

Table 4: Immuno-histo chemistry status.

Variables	N	%
ER+/PR+/HER2neu+(TriplePositive)	20	23.80
ER-/PR-/HER2neu–(TripleNegative)	23	27.38
ER+/PR+/HER2neu-	21	25
ER-/PR-/HER2neu+	14	16.66
ER+/PR-/HER2neu-	1	1.19
ER-/PR+/HER2neu-	2	2.38
ER+/PR-/HER2neu+	3	3.57

DISCUSSION

Breast cancer is showing increasing incidence in India and it is surpassing cervical carcinoma. The majority of the patients in our study presented in their thirties and forties and almost half of them were premenopausal which is similar to the study conducted by viz Malvia et al and viz Das et al.[8,9] The majority of patients were married and multiparous in our study which is in concordance with Wani et al.[10]. Majority of our patients were having T2 stage (50%) followed by 19.04% having T4 stage and nodal involvement in our study was also more which is as per the study conducted by Kumar et al which says Axillary lymph node involvement gets increased as the tumour size gets increased.[11] In our study majority of patients were having stage IIB (52.38%) followed by 36.90% having stage III which is similar to the study conducted by Wani et al.[10] 85.71% of patients in our study had invasive ductal carcinoma followed by 4.76% having medullary carcinoma and 9.52% having invasive lobular carcinoma which is similar to the study conducted by Bera et al and

Mistry et al.[12,13] Metastatic disease in our study group was 4.76% surprisingly lower than reported by other Indian studies, but it was comparable to the incidence reported from developed countries.[14-16] Most Indian studies reported 15–20% of patients with metastatic disease. 23.80% of patients were ER+/PR+/HER2/neu + (Triple Positive), 27.38 % of patients were ER-/PR-/HER2/neu- (Triple Negative), 25.0% were ER+/PR+/HER2/neu-, 16.66% patients were ER-/PR-/HER2/neu+, 1.19% were ER+/PR-/HER2/neu, 2.38% were ER-/PR+/HER2/neu- and 3.57% were ER+/PR-/HER2neu+. which is similar to the study conducted by Das et al.[17] In India, the prevalence of triple-negative tumour (31%) is more as compared to the Western country.[18] Kakarala et al reported a higher incidence of triple-negative breast cancer in Pakistan and Indian population and also observed survival rate of patients with triple-negative (ER, PR, and Her2Neu negative) breast cancer was low compared to other subtypes due to aggressive biology of disease, resistant to cytotoxic drugs.[19]

Limitations

This study was a single institutional, retrospective study and results may not represent the general population. The sample size was small as compared to other Indian studies conducted.

CONCLUSION

In our study, the incidence of female breast cancer was more in the age group of 41-50 years and most of the patients were in the premenopausal group and were married. Percentage of Stage II was more as compared to Stage III. The most common histopathology type was invasive ductal carcinoma. Triple negativity was seen more in our patients. Increased awareness, early diagnosis by screening procedure and early initiation and adequate proper treatment can reduce mortality of breast cancer in our country.

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