ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Retrospective Study Of Behaviour Of Breast Cancer In Young Patients From Rural Tertiary Care Centre, Loni, Maharashtra, India.

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ABSTRACT

Breast cancer is the most common cause of cancer in women worldwide. They have more aggressive clinical behaviour with poor outcomes in younger patients. The aim of this study was to evaluate the impact of age on prognosis of breast cancer in women above and under 40 years of age. Medical record of 300 patients with invasive breast cancer were analysed from January 2018 to December 21 in our department. The last was done in December 2021.All cases diagnosed with breast cancer stages I to IV were evaluated, and grouped on the basis of age [less than 40 and above 40 years]. Baseline categorical variables were analysed using the Chi-square test or Fisher's exact test. Non categorical variable was analysed using t-test. Result: A total of 260 patients were reviewed because 40 patients defaulted. The median age at the time of diagnosis was 44.6 years (range 30to 80years). Metastasis to distant organs was more in women with age.

Keywords: Breast cancer, Behaviour young patients.

https://doi.org/10.33887/rjpbcs/2024.15.2.49

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ISSN: 0975-8585

INTRODUCTION

The incidence of breast cancer among young patients, particularly in rural areas, presents a multifaceted challenge in healthcare. Understanding the behavior and outcomes of breast cancer in this demographic is crucial for effective management and resource allocation. Yet, research focusing specifically on young patients from rural areas remains limited. This retrospective study aims to fill this gap by examining the clinical characteristics, treatment patterns, and survival outcomes of young breast cancer patients within a tertiary care center serving rural communities. By elucidating these factors, this study endeavours to provide valuable insights into optimizing care strategies tailored to the unique needs of this population. Breast cancer is the most common cause of cancer in women worldwide. Especially it is a disease of postmenopausal and elderly age group, approximately 5.6% of breast cancer patients are ≤40 years [1]. They're characterized by less hormone sensitivity, higher human epidermal growth factor receptor 2 expressions, aggressive clinical behavior with poor outcomes as compared to the elderly group [2,3].

The aim of this study was to evaluate the impact of age as an adverse factor in the presentation, recurrence, and prognosis of breast cancer in women above and under 40 years of age.

MATERIALS AND METHODS

We analyzed medical records of 150 patients diagnosed with invasive breast cancer from January 2018 to December 2021 in our hospital. A total of 16 patients were excluded as they did not turn up for any treatment. Finally, 134 patients were analyzed. The last follow-up of all patients was done in December 2021. All cases diagnosed with breast cancer Stages I–IV were evaluated. The patients were then grouped on the basis of age. cases diagnosed with breast cancer Stages I–IV were evaluated. The patients were then grouped on the basis of age.

Additional exclusion criteria were any therapy before diagnosis (surgery/radiotherapy/chemotherapy), previous history of malignancy and history of any other medical illness, which would otherwise limit the survival of the patient in the absence of malignancy. All patients underwent standard treatment modalities (neoadjuvant or adjuvant chemotherapy, radiotherapy, chemoradiation, and/or surgery: modified radical mastectomy, breast conservation surgery, toilet mastectomy depending on the stage of presentation

RESULTS

Characteristics of 300 breast cancer patients: Comparison between two groups

	<40	>40	P
Patients number 107	192		
Stage III (%)			
Yes	71 (66.16)	10 (54.4)	0.029
No	36 (33.84)	87 (45.6)	
T status (%)			
T1	5(4.5)	3 (1.67)	0.792
T2	25(23.3)	68 (35.56)	
T3	48 (45.11)	60 (31.38)	
T4	29 (27.06)	60 (31.38)	
Nodal status (%)			
N0	25(24.06)	70 (36.4)	0.659
N1	60(55.63)	75(38.91)	
N2	20(19.54)	45 (23.84)	
N3	1 (0.75)	2 (8.36)	
Nodal positive (%)			
Yes	81(75.93)	124 (64.43)	0.027

No	25(24.06)	68 (35.57)	
Metastasis (%)			
M0	104 (90.97)	186 (95.82)	1
M1	3(9.03)	6 (4.18)	
Surgery (%)			
MRM	101 (94.73)	182 (94.56)	1
BCS	2 (1.5)	3 (1.25)	
Toilet mastectomy	2 (2.25)	3 (1.67)	
None	1(1.5)	5 (2.5)	
Chemotherapy (%)			
Neoadjuvant	56 (52.63)	90 (46.86)	0.23
Adjuvant	47(44.37)	100 (51.88)	
Palliative	3(3.0)	2 (1.25)	
Type of chemotherapy (%)			
Anthracycline based	46(43.6)	97 (50.62)	0.21
Taxane based	58 (54.88)	92 (48.11)	
Others	2 (1.50)	03 (1.25)	
Margin status (%)			
Positive	13 (12)	23 (12.13)	0.874
Negative	82(76.7)	146 (76.15)	
Not specified	12 (11.3)	22 (11.71)	
Grade (%)			
I	7 (6.76)	19 (10.04)	0.846
II	35(33.08)	58 (30.54)	
III	31 (23.3)	49 (25.94)	
NS	39 (36.84)	64 (33.47)	
LVI (%)			
Positive	54 (50.37)	86 (44.765)	0.14
Negative	37 (34.58)	68 (35.56)	
Not specified	16(15.03)	37(19.66)	
ER status (%)			
Positive	42(39.84)	106 (55.23)	0.005
Negative	64 (60.16)	86 (44.76)	
PR status			
Positive	29(27.81)	86 (44.76)	0.001
Negative	77 (72.18)	106 (55.23)	
HER2/neu (%)			
Positive	227 (21.05)	41 (21.75)	0.89
Negative	84 (78.94)	150(78.24)	
Metastasis			
Yes	44(41.35)	61 (31.8)	0.07
No	62(58.64)	131 (68.2)	

DISCUSSION

Breast cancer in young age is very aggressive and has a worse clinical outcome as compared to that in the older group [3,4]. Poor outcome in young age is due to an advanced presentation at diagnosis (larger T size and axillary lymph node positivity), a higher grade of differentiation, presence of lymphovascular invasion, lower ER/PR expression, presence of triple negativity [5-7]. In a study by Gajdos et al. demonstrated that patients younger than years had larger tumors, more nodal involvement

(65% vs.35 %) and were more likely to be diagnosed with Stage II or III cancer [7]. This present study, patients in above 40 group. Younger age group has been shown to be associated with an increased incidence of ER/PR negativity compared to older patients [6, 8]. This study also demonstrated that patients positive for ER and PR receptors in below 40 years age group were17 % and35 % respectively versus20 % and28 % respectively in above 40 years age group. The analyses of NSABP group trials had also shown that young age is an independent predictor of locoregional recurrence in breast cancer.[9] A study by Bharat et al. estimated the risk of breast cancer recurrence for women diagnosed below the age of 40 to be times higher than in those diagnosed above 40 years.[4] This has been seen that the survival in the young MRM=Modified radical mastectomy, BCS=Breast conservation surgery, Nage group is also inferior as compared to older age group [3, 4, 9, 10].

This study also has a limitation as it is a retrospective study with small sample size. Furthermore, the median follow-up is also very less. The cohort presented in the tertiary center is not the representative of the general population as a whole. In addition, patients came from distant places being a tertiary center; therefore, the percentage of loss to follow-up is high. A larger sample size with a long follow-up may reveal the significant differences between the two groups.

The higher proportion of advanced-stage diagnoses (Stage III) among younger patients is concerning. This may stem from various factors such as delayed presentation, lack of awareness, or unique biological aggressiveness of tumors in this age group. Addressing these issues requires targeted public health interventions aimed at improving awareness, access to screening, and early detection strategies tailored to rural populations.

Furthermore, the disparity in nodal involvement and metastatic spread underscores the need for vigilant surveillance and aggressive treatment approaches in younger patients. The higher rates of nodal positivity and metastasis in this cohort emphasize the importance of comprehensive staging and personalized treatment planning to optimize outcomes.

The variation in surgical approaches reflects the complexity of decision-making in young breast cancer patients, considering factors like tumor size, nodal status, and patient preferences. While most patients underwent mastectomy (MRM), the limited utilization of breast-conserving surgery (BCS) in young patients warrants further investigation into the barriers and perceptions influencing treatment decisions in this population.

Chemotherapy remains a cornerstone in the management of breast cancer, with both neoadjuvant and adjuvant regimens playing crucial roles in improving survival outcomes. However, the comparable rates of chemotherapy utilization between age groups suggest equitable access to systemic therapy, highlighting the importance of standardized treatment protocols regardless of age.

The hormone receptor status (ER and PR) delineates a notable contrast, with younger patients exhibiting higher rates of hormone receptor-negative tumors. This not only influences treatment selection but also underscores the potential for targeted therapies in hormone receptor-positive disease. The significance of HER2/neu status, although similar between age groups, underscores the importance of HER2-directed therapies in eligible patients.

Margin status, tumor grade, lymphovascular invasion (LVI), and metastatic status offer additional insights into disease aggressiveness and prognosis. While margin positivity was infrequent, tumor grade and LVI may serve as prognostic markers warranting closer follow-up and adjuvant therapies.

CONCLUSION

Many poor prognostic factors have been associated with young age patients with breast cancer as shown by many studies in English Literature as well as above retrospective study from our center, so aggressive management is required to reduce morbidity, mortality, and metastasis in breast cancer presenting at a young age.

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