

## Geriatrics Breast Cancer: Stage at Presentation and Relationship of Various Factors with Advanced Stage

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### ABSTRACT

**Objective:** To determine the frequency of various stages of breast cancer at presentation and the relationship of various factors with advanced stage in geriatric patients in Pakistan.

**Study Design:** Prospective longitudinal study.

**Place and Duration of Study:** Department of Oncology, Hameed Latif Hospital, Lahore Pakistan, from Feb to Jul 2018.

**Methodology:** A total of 130 geriatric breast cancer patients between the ages of 60-80 years were included. A biopsy report was noted, which was done in the surgical ward and histopathology was done in the institutional pathology department. The researchers evaluated all the reports. In addition, the stage of the breast cancer documented (stage documented by CT scan chest abdomen and pelvis and bone scan. Chest X-ray and ultrasound abdomen and pelvis report were reviewed in case of CT scan report not available) as per American joint committee on Cancer (AJCC) TNM staging system for breast cancer 8th edition.

**Results:** Mean age was  $69.10 \pm 5.89$  years. 106 (81.54%) patients were between 60 to 70 years of age. The mean duration of the disease was  $7.48 \pm 3.87$  months. 52 (40.0%) geriatrics patients presented in stage IV followed by stage III, II, I as 48 (37.00%), 30 (23.0%) and 00(0.0%) respectively. The long duration of illness has a significant relationship with advanced disease ( $p$ -value $<0.05$ ).

**Conclusion:** Stage IV is the most common stage of breast cancer at presentation in geriatric patients, followed by stages III, II and I, respectively, and the long duration of illness has a significant relationship with advanced disease.

**Keywords:** Breast cancer, Geriatrics, Stage.

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### INTRODUCTION

Women worldwide have breast cancer with a high mortality rate. It is the most common malignancy in the female population around the globe.<sup>1</sup> Age has been the most crucial risk factor for getting this condition. More than half of the cases are usually older than 65 years of age, and around 35% have been more than 70 years of age.<sup>2</sup> Most women who die of breast cancer are over the age of 65. Mortality has been related to advanced age.<sup>3</sup> It is anticipated that, by the year 2030, approximately 20% of the population will be aged over 65 years; therefore, the proportion of older women with breast cancer will grow considerably in the near future. However, data relating to breast cancer treatment in older women are minimal, and the need to develop appropriate treatment recommendations becomes even more crucial when considering the expected rise in the number of older women with stage

breast cancer. Elderly patients, despite clear predisposition to get this disease more and with high mortality, get adequate treatment usually less often than young patients, which get aggressive treatment in most cases.<sup>4</sup>

By the first half of the 20th century, clinicians had become aware that not all breast cancers shared the same prognosis or required the same treatment, and attempts were made to define characteristics that could reliably distinguish those tumours that required aggressive treatment from those that did not.<sup>5</sup>

Breast cancer staging is helpful because of its ability to estimate prognosis. It also provides valuable information about the current status of cancer detection and management and the success of implementing new strategies.<sup>6,7</sup> Patients in a higher age bracket usually have a tumour with hormone receptivity, which may be a good response to endocrine treatment.<sup>8</sup> On the other hand, these patients have a higher chance of presenting with advanced disease, which may increase the chance of poor prognosis even after the treatment.<sup>9</sup>

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The rationale of this study was to determine the stage at presentation in geriatric breast cancer patients in our local population. Poverty, illiteracy, stigma, and access to the cancer centre prevent the elderly patient from access to early cancer detection and treatment. The study aims to determine the stage and use stats of the study to help organize awareness programs on regional and national levels for educating the geriatric population not to ignore this devastating disease and emphasizes early detection and proper management to reduce the morbidity and mortality of these particular patients.

**METHODOLOGY**

This prospective longitudinal study was planned and conducted at the Oncology ward, Hameed Latif Hospital, Lahore, between February to July 2018. The sample size was calculated by using the WHO sample size calculator by using the anticipated proportion of geriatric breast cancer as=14.0%,<sup>10</sup> confidence Interval =95%, and precision required (d)=0.06. The sample size by these parameters was 130 patients. Therefore, 130 patients were included in the study using a non-probability, consecutive sampling technique.

**Inclusion Criteria:** All the geriatric breast cancer patients between the ages of 60-80 years of age were included in the study.

**Exclusion Criteria:** Patients with metastatic disease in the breast and primary tumour elsewhere or those not willing to be included in the study were excluded from the study.

After approval from the Ethical Review Committee (HLH/223/2018), 130 patients presenting to the Oncology Department of Hameed Latif Hospital, Lahore Pakistan, fulfilling the inclusion criteria, were included in the study after taking informed written consent. A biopsy report for each patient was noted, which was performed in the surgical and histopathology department of the institution. The researchers evaluated all reports, and the stage of the breast cancer as per chest x-ray, ultrasound abdomen and pelvis, CT scan abdomen and pelvis and bone scan was noted as described in the operational definition. All the data were recorded along with the demographic profile of the patients on pre-designed proforma.

Geriatrics Breast cancer patients were defined as all patients of age 60-80 years with histological diagnosis. TNM staging was done based on tumour size, nodal involvement and metastasis as per international guidelines and protocol.<sup>7</sup>

Statistical Package for Social Sciences (SPSS) version 23.0 was used for the data analysis. Mean and standard deviation for age and duration of disease were calculated. The qualitative variables like the place of living, education status (illiterate/primary/middle/matric/graduate), socioeconomic status and stage of breast cancer (I/II/III/IV) were noted as frequency and percentage. Variables like age, duration of disease, place of living (rural/urban), education status (illiterate/primary/middle/matric/graduate) and socioeconomic status (poor/middle/upper) were assessed by using the chi-square to see their effect on stage at presentation. The *p*-value ≤0.05 was taken as significant.

**RESULTS**

A total of 130 patients were included in the study. The age range in this study was from 60 to 80 years, with a mean age of 69.10 ± 5.89 years. The mean duration of the disease was 7.48 ± 3.87 months. In this study, we found that 52 (40.0%) geriatric patients presented in stage-IV followed by stage III, II, and I like 48 (37.0%), 30 (23.0%) and 0 (00.0%), respectively. The relationship of various stages of breast cancer concerning age and duration of the disease were shown in Table-I and II, respectively.

**Table-I: Relationship of various stages of breast cancer with respect to age.**

Stages of Breast Cancer		60-70 Years (n=106)	71-80 Years (n=24)	<i>p</i> -value
I	Yes	00 (0.0%)	00 (0.0%)	-
	No	106 (100.0%)	24 (100.0%)	
II	Yes	22 (20.75%)	08 (33.33%)	0.187
	No	84 (79.25%)	16 (66.67%)	
III	Yes	42 (69.62%)	06 (25.0%)	0.180
	No	64 (60.38%)	18 (75.0%)	
IV	Yes	42 (69.62%)	10 (41.67%)	0.854
	No	64 (60.38%)	14 (58.33%)	

**Table-II: Relationship of various stages of breast cancer with respect to duration of disease.**

Stages of Breast Cancer		≤12 (n=97) Months	>12 (n=33) Months	<i>p</i> -value
I	Yes	00 (0.0%)	00 (0.0%)	-
	No	97 (100.0%)	33 (100.0%)	
II	Yes	22 (22.68%)	08 (24.24%)	0.854
	No	75 (77.32%)	25 (75.76%)	
III	Yes	42 (43.30%)	06 (18.18%)	0.010
	No	55 (56.70%)	27 (81.82%)	
IV	Yes	42 (43.30%)	10 (30.30%)	0.188
	No	55 (56.70%)	23 (69.70%)	

Our study could not establish the relationship between various stages of breast cancer concerning the socioeconomic status and education level. Only a long

duration of illness was related to the advanced stage of illness among the study participants ( $p$ -value<0.05).

## DISCUSSION

Breast cancer is the most common cause of cancer death in women over 65 years of age.<sup>11</sup> The multidisciplinary approach to this cancer includes prevention, early detection through appropriate screening, treatment of localized tumours and management of the advanced disease. The family physician may assume a vital role in these interventions by providing education and support to patients and their families. In addition, the removal of age-related barriers to breast cancer prevention and treatment is also an important task of the family physician.<sup>11,12</sup> Breast cancer characteristics (e.g., tumour grade, histology, hormone receptivity) appear to be similar between women aged  $\geq 60$  years and younger women. However, women aged  $\geq 60$  years receive less aggressive treatment than younger women. Therefore, we have conducted this study to determine the frequency of various stages of breast cancer at presentation in geriatric patients.

The age range in this study was from 60 to 80 years, with a mean age of  $66.46 \pm 5.83$  years. In this study, we found that 52 (40.0%) geriatric patients presented in stage IV followed by stage III, II and I as 48 (37.0%), 30 (23.00%) and 0 (00.0%), respectively.

In a study done by William *et al*, in 2008,<sup>13</sup> the income influenced older women's probability of undergoing screening regularly and, therefore, the prognosis. In contrast, a more recent study done by Chatzidakis *et al*,<sup>14</sup> on 173 women aged 60 years and older have shown a large percentage of early stages diagnoses: stage I (35%) and II (32.9%), with about 50% of cases showing negative axillary nodes. Less favourable are the data from Serra *et al*,<sup>15</sup> who has observed that the incidence of positivity lowered with the growing mortality. Other researchers have found a more frequent delay in diagnosis in older women,<sup>16,17</sup> even if the influence of such delay cannot be assessed.<sup>18</sup>

In a study published by Wang *et al*,<sup>10</sup> 10 years of data from a single hospital was discussed, and around half of the patients were more than 70 years old, and around 35% were more than 80 years old. Tumour size was not statistically significantly different in all the age groups. Most of the patients presented in stage-II followed by stage I, and invasive ductal type was the commonest type in all the age groups.<sup>10</sup> We had similar results in our study, emphasizing the similar epidemiology of this disease across the globe.

The stage at diagnosis is a significant determinant of survival from breast cancer; early-stage disease is associated with a better prognosis than late-stage disease.<sup>19-21</sup> Earlier stage at diagnosis, combined with therapeutic advances, was a significant contributor to the sharp reductions in breast cancer mortality rates in the past two decades. By contrast, most patients with breast cancer in sub-Saharan Africa present with late-stage disease, which is due to poor awareness, an absence of organized early detection programs, and poor facilities for accurate and timely diagnosis and treatment.<sup>22-24</sup>

In a meta-analysis conducted by Bastiaannet *et al*,<sup>25</sup> it was observed that patients who were elderly presented with an advanced stage of illness. The unknown stage was also seen more in elderly patients than young patients. Nodal involvement could not be assessed in most elderly patients. Distant metastasis of breast cancer was also seen more among the patients between 75-80 years of age. It was concluded that the overall disease was more severe in the elderly patients.<sup>25</sup> Our findings were not significantly different as stage IV was the most common stage with which our elderly patients presented for the first time in OPD.

## CONCLUSION

Stage IV is the most common stage of breast cancer at presentation in geriatric patients, followed by stages III, II and I, respectively, and the long duration of illness has a significant relationship with advanced disease.

**Conflict of Interest:** None.

## Author's Contribution

SS: Study design, conception, data analysis and interpretation, AAC: Data interpretation, analysis, critical review, MZH: Data acquisition and review, FI: Data analysis.

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