

Age and stage of breast cancer in Pakistan: An experience at a tertiary care center

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Abstract

Objective: To determine the age and stage of breast cancer in a tertiary care center in Karachi, Pakistan

Method: This retrospective, descriptive study was conducted at Breast Unit, Department of Surgery, Liaquat National Hospital Karachi, Pakistan. From 1994 to 2016 all biopsy-proven breast cancer patients were reviewed and their age and stage at presentation were noted.

Results: In the given time period 10, 018 patients with Breast cancer were registered. The most frequent age at diagnosis was in the fourth decade of life (28.51%). The majority of patients were diagnosed in stage 2 (47.26%) and only less than 4% were detected in stage 1. The stage of presentation did not differ between young and older age group of women

Conclusion: Breast cancer is diagnosed at a younger age group in Pakistan, at least a decade earlier than the west and at an advanced stage, commonest being stage 2.

Keywords: Breast cancer diagnosis, Age, Stage. (JPMA 68: 1682; 2018)

Background

Breast cancer is the most common cancer in women worldwide including Pakistan. Pakistan has been reported to have the highest incidence of Breast cancer in Asia.¹ A recently published article stated that most of the cases of breast cancer were diagnosed at an advanced stage and percentage of patients in early stage (stage 1) has not changed in Pakistan in the last 2 decades.² According to WHO data of 2015, average life expectancy in Pakistan is 66.4 years, for which Worldwide life expectancy rank of Pakistan is 127.³ When the average life span is less than the western population, one wonders whether screening for breast cancer should be performed at the same age as suggested by the West. Information about age at diagnosis of breast cancer, is necessary to help plan appropriate recommendations for the community to determine the age of initiating the screening programme.

It is known that survival decreases when breast cancer stage progresses. Survival is lowest when the diagnosis is made at an advanced stage.⁴ When the prevalence is high a fair assessment of the stage at presentation is required for better survival. This calls for an early diagnosis.

Unfortunately there is no National tumor registry in Pakistan, so - information is obtained from hospital based tumour registry, which is not available in all facilities. There is no robust data available to rely on the age and stage of presentation of breast cancer in Pakistan. A few studies are available, but most are on small sample sizes.⁵⁻⁷

The Breast Unit of Liaquat National Hospital, Karachi receives a large number of these patients from diverse areas and having different ethnic backgrounds. It is therefore presumed that this data would be a representative sample for the country. The age and stage at presentation could be assessed from this population. This figure could be considered generalizable for the entire country and provide a prevalence figure. The purpose of this study was to note the age and stage of breast cancer at presentation in our hospital.

Patients and Methods

A retrospective observational study was performed which included all patients registered with the breast clinic and confirmed to have biopsy proven Breast cancer. The patients were selected from 1994 to 2016. The data was retrieved from purpose built breast cancer patient software, where all information about breast cancer patients is recorded. The data included age, tumour size

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(T), Nodal status (N) and Metastasis (M). The TNM Stage at presentation was calculated according to the American Joint commission on cancer (AJCC) criteria by the computer software.⁸

From 1994 to 2016 the number of patients with breast cancer in each decade of life were enumerated and percentage of patients in each decade was calculated. Similarly, the number of patients in all stages of breast cancer were calculated in percentages

The research title was approved by the hospital research committee. The authors have no potential conflict of interest and no external source of funding was received by either of the authors. Compliance with the ethical standards were met as per the hospital policy and patient confidentiality was maintained at all times.

Results

Figure-1 shows the number of new breast cancer patients

diagnosed year wise. In this time frame a total of 10,018 breast cancer patients were registered.

Figure-2(a) shows the age at the time of diagnosis. Peak age was in the fourth decade, 28.51% of patients were in this age bracket. 23.39% were in the third decade and 23.76% were in their 50s. 28.82% were less than 40 years of age and 6.74% were less than 30 years of age

Figure-3 shows Stage at presentation. Majority of the patients were detected in stage II 47.26%. Only 3.98% were diagnosed in Stage I.

In Figure-4 Stage at presentation is compared in younger women i.e. less than 40 years with older women above 40 years of age. The figure does not show any gross difference. Irrespective of the age at diagnosis, whether younger or older, the stage at diagnosis was more or less similar.

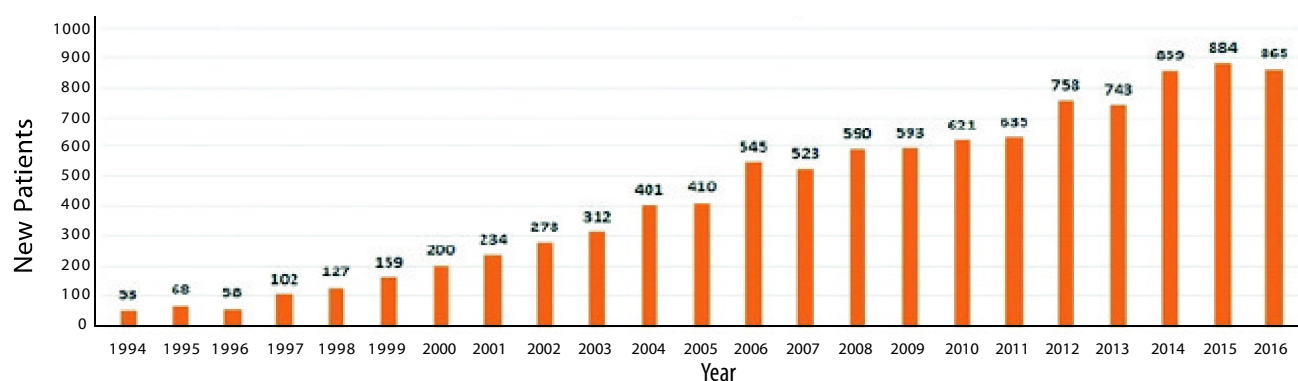


Figure-1: New cancer patients registered per year (n=10,018).

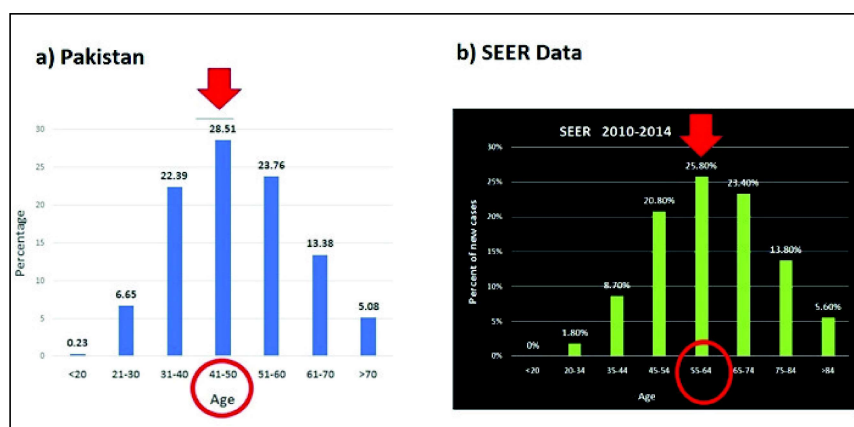


Figure-2: The age at the time of diagnosis.

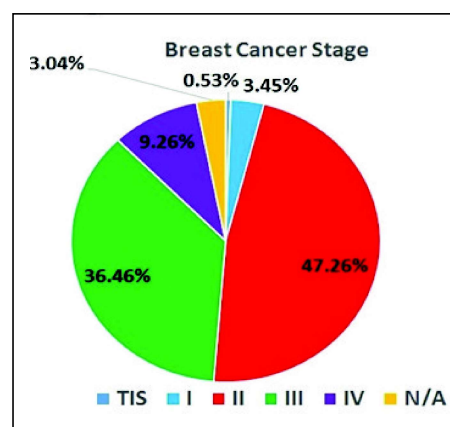


Figure-3: Stage at presentation.

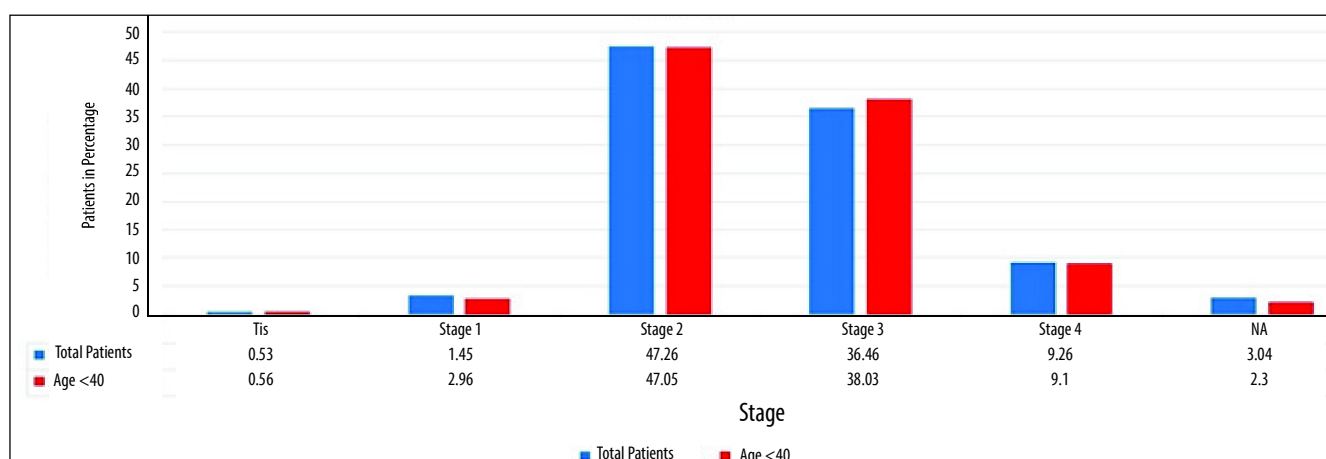


Figure-4: Comparison of stage with young women.

Discussion

It is generally recommended that screening for breast cancer should start much earlier than the age at which the disease presents. In our study the peak age of breast cancer presentation was in the fourth decade. In SEER data the peak age was between 55-64 years with the median age being 62 years.⁵ It is thus observed that breast cancer is encountered at least a decade earlier than in the west. (Figure 2 (b)) Data from other Pakistani studies also shows that that peak age at diagnosis was in the fourth decade.^{6,7} American Cancer society recommends screening at 45 years for an average risk women.⁹ However women given an opportunity can begin screening at 40 years of age. For us when 28 percent of our patients are less than 40 years and around 7% are less than 30 years of age at diagnosis, we need to decide at what age we should start screening our women. The same question was raised by Maha abdel hadi, who has also suggested early screening in developing countries as in their study 35% of patients were below 40 years of age.¹⁰ While suggesting that, we need to keep in mind the problems of screening in a young dense breast and look for the best recommended method for screening women in this young age group.

Breast self- examination and Clinical examination by a trained health professional has always been thought to be a reliable screening tool. American College guidelines do not recommend self-examination as a screening tool, as it does not decrease mortality. However it can be used to increase awareness and report for any change noticed. Screening mammography is the only method that has proved to decrease mortality. Many women are concerned

about the risk of radiation hazard with a mammogram. Nowadays with modern dedicated machines, the radiation exposure is minimal. In young women with dense breasts there can be higher chance of false negative as well false positives. These women with positive findings require another imaging modality and biopsies, which would add to financial costs and unnecessary anxiety to already under privileged women in Low Income Countries.¹¹ Death rate from Breast cancer in Pakistan is very high and it is reported to be in the top most common 20 causes of death. Age Standardized death rate for breast cancer in Pakistan is 26.76, whereas worldwide it is only 8 as reported by WHO 2014. Survival is dependent upon the stage of presentation, stage 4 being the worst.¹²

In our study almost half of patients were diagnosed in stage 2(47%), 36% in stage 3 and only a small percentage around 4%, were detected in stage 1. Although stage 4 in our data is only 9.26%, but other local studies have reported stage 4 to be 17% and 24%.^{13,14} Small percent of stage 4 patients in our data could be because of our centre being private. Unreported data from oncology services of our institute is around 15%. The data from developing countries including Pakistan and India - along with results of other local studies and also SEER data has shown that a very small proportion, less than 10% of the patients were diagnosed in stage 1.¹⁵ The main reason for delay in presentation are lack of health education and awareness, misconceptions and fear of the cancer treatment along with a strong faith on traditional medicines. This is superadded by inadequate cancer diagnostic and therapeutic facilities especially in rural areas and financial constraints.¹⁶ For diagnosing breast cancer at an early stage which would improve survival,

regular screening is recommended.

The stage of presentation in young women below 40 years of age, is not different from that of older age group except marginally increased stage 3 cancers in younger women (38%) compared to (36.46%) in overall patients with stage 3 (Table-4). Young women have a higher risk of systemic recurrence and higher mortality. In our population, when there is no significant difference in the stage of presentation, there must be other factors like biologically aggressive disease¹⁷ or Genetic expression of bad prognosis.¹⁸ We do not have BRCA 1 and 2 information in our patients subset and this could be a significant risk factor.

This large data has been collected over 2 decades of hard work, and now we need to look at other areas including biology, management, survival, health economics and many other factors in which our local data is deficient.

Conclusion

In Pakistan, breast cancer is diagnosed at a younger age at least a decade earlier than in the western countries. The women also present at a more advanced stage, with stage 2 being the most frequent.

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