

AN EXPERIENCE WITH BREAST DISEASE IN A SURGICAL UNIT OF A TEACHING HOSPITAL OF LAHORE

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Breast cancer is the most common malignancy in women in Pakistan. Our patients suffer from the disease at a younger age than that reported in Western literature. A significant proportion of cases are 35 years old or younger. Our objective was to study the clinical features of the disease, risk factor profile and trends among women with breast cancer at our institution. A prospective case series of 205 women presenting with breast disease and undergoing treatment at Surgical Unit IV, Jinnah Hospital, Lahore, was conducted from January, 1999 to December, 2003. The result showed that 30.73% of the patients had benign breast disease whereas 69.26% were diagnosed as having breast cancer. The commonest benign disease was fibroadenoma (60.3%). Mean age of the cancer patients was 34.56 years \pm 11.5 years. Among the cancer group, the commonest presentation was a painless lump (83.8%). The risk factor profile included positive family history of breast cancer in first degree relatives in 11.97% of the patients with breast cancer, nulliparity in 7.75% and oral contraceptive use in 14.08%. The commonest histological type was infiltrating ductal carcinoma (85.2%). Most of the patients presented at stage III (59.85%). Mammography was done in 48% and breast ultrasonography in 52% of the patients. Among these 69.7% of the patients underwent modified radical mastectomy and 16.2% had radical mastectomy. Breast conservation was offered to 14.08% patients. Adjuvant chemotherapy was administered to 49% patients and 81% received adjuvant radiotherapy. It was thus concluded that women with breast cancer treated at our institution presented at a younger age than Western women. Interestingly, majority of our patients have none of the established risk factors for the disease. Despite advances in diagnostic modalities, most of our patients were diagnosed at advanced stages of breast cancer due to late presentation. There is a great need for creating awareness regarding breast cancer amongst women in Pakistan.

INTRODUCTION

Breast cancer is the commonest malignancy in women. It accounts for 18% of all female cancers and there are about 1 million new cases each year all over the world. About 1 in 12 women will develop breast cancer in their lifetime, the incidence being around 8%¹. The incidence of breast cancer is progressively increasing because of the increasing life expectancy and also because of the rising incidence among younger women².

The epidemiology of breast cancer in Pakistani women is not precisely known due to the lack of an adequate tumor registry system^{3,4}. However, evidence suggests that in Pakistani women, breast cancer presents at a younger age compared to the Western population⁴. Breast cancer in the younger age group is still an under studied entity. Current literature suggests that breast cancer in young women is more aggressive compared to older women, i.e., younger women show a predo-

minance of high grade lesions and present at a more advanced stage⁴⁻⁶. Furthermore, the risk factor profile of breast cancer patients also differs according to the age at presentation. Unlike the older women, the established risk factors may not play a significant role in the pathogenesis of breast cancer in younger women⁵⁻⁹. It is, therefore, being implied that breast cancer in young women (\leq 35 years old) may be a different entity from that seen in older women, being aetiologically and clinically distinct^{10,11}.

Most studies conducted in Pakistan agree that majority of our patients are not only younger but also have none of the risk factors for breast cancer seen in Western women. They also present at an advanced stage of the disease. Therefore, we conducted a case series over a period of 5 years at Jinnah Hospital, in order to assess the demographic features, clinical presentation and risk factor status of breast cancer patients treated at our institution.

PATIENTS AND METHODS

The study design was a case series of women with breast disease who were treated as inpatients at Surgical Unit IV, Jinnah Hospital, Lahore, from January, 1999 to December, 2003. Patients presenting with breast disease, who were lost to follow up before undergoing definitive treatment at Jinnah Hospital were excluded from the study. Our sample size consisted of 205 patients.

A specially designed form was used for data collection. This form took into account the demographic features, mode of presentation, risk factor profile, histological diagnosis, other diagnostic procedures, stage of the disease and the treatment offered. A pilot study was conducted to test the practicality of the form and the form was accordingly revised. The final form consisted of 15 variables, most of which were categorical.

The data collected was analyzed using SPSS version 11 software. The frequencies of different variables were determined and the clinical patterns were studied. Where appropriate, Chi square test of homogeneity was run to find possible associations. The level of significance was taken as < 0.05 .

RESULTS

Out of the total sample of 205 patients, 63 had benign breast disease (30.73%) and 142 had breast cancer (69.26%). The mean age of the sample was 38.6 years \pm 12.7 years.

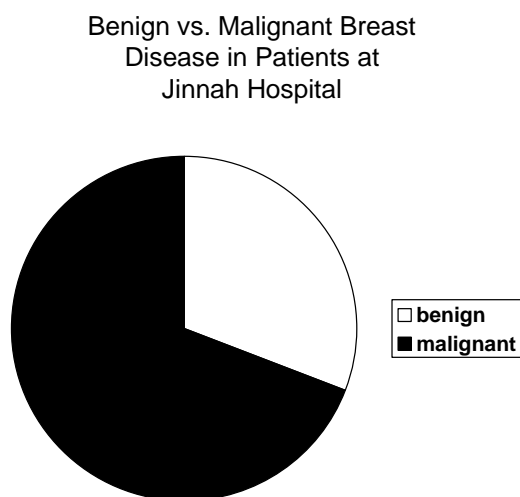


Figure 1:

Benign Diseases

Amongst the 63 patients with benign breast disease, 38 had fibroadenomas (60.3%), 15 had

breast abscesses (23.8%) and 10 had breast tuberculosis (15.87%).

The most common benign disease was fibroadenoma. Patients with fibroadenomas were 19 to 45 years old. Mean age was 25.6 years \pm 8.4 years. The most common presentation in this group was a lump (90%). Bilateral disease was seen in 7.89%. The mean size of the fibroadenoma was 4.8 cm. Out of the 15 patients with breast abscesses, 12 were breast fed. The mean age was 25.4 years \pm 5.2 years.

The mean age of patients with breast tuberculosis was 36.8 years \pm 11.4 years. There was no history of TB in any patient. Three out of 15 patients gave history of exposure to the disease. None of these patients had any signs or symptoms of pulmonary tuberculosis or extra pulmonary tuberculosis elsewhere.

Breast Cancer

Age Distribution

The mean age of patients with breast cancer was 34.56 years \pm 11.5 years. A majority of (73.9%) of the patients were 40 years old or younger and 61.9% of the patients were 35 years of age or less. The majority then were between 30 years and 39 years old. [Figure 2].

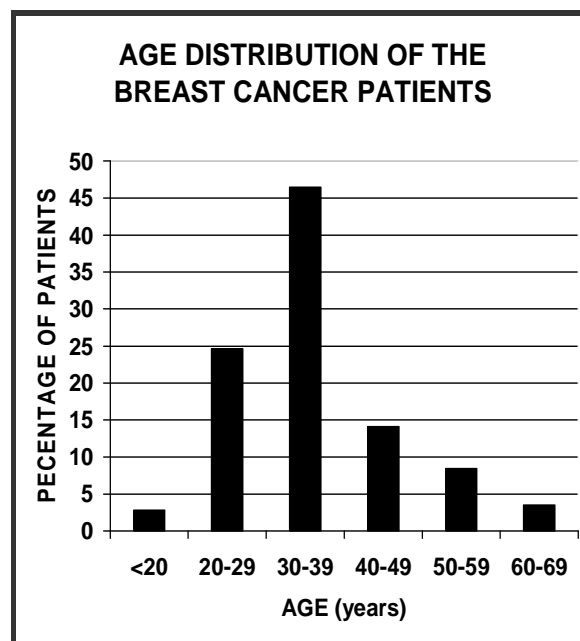


Figure 2:

Modes of Presentation

Most of the patients with breast cancer present with a painless lump (83.8%). Most of these lumps

were in the upper outer quadrant of the left breast (84.5%). Other modes of presentation included nipple discharge (10.56%), mastalgia (7.04%) and skin changes (6.34%) that included erythema, tethering etc.

Risk Factor Profile

Among these (7.75%) of the patients with breast cancer were nulliparous. Mean number of pregnancies was 4.8. The majority (84.5%) had 3-5 full term pregnancies. Majority of (70.42%) of the women breast fed for at least 1 to 2 years.

Family history of breast cancer in first degree relatives was positive in 11.97% of the patients; whereas 2.8% had 2 or more first degree relatives with breast cancer, who developed the disease at 50 years or less.

Among them 14.08% women used combination of oral contraceptives. 4.23% of these patients were currently using them and 9.85% gave history of use in the past, all within the past 10 years. The total duration of use was less than 5 years in all patients, the mean duration being 2.5 years.

Stage and Histology

The majority presented at stage III (59.85%), followed by stage IV (21.12%), stage II (11.97%) and stage I (7.04%) in descending order [figure 3]. The most common histological type was infiltrating ductal carcinoma (85.2%). Medullary carcinoma was seen in 14.8% patients.

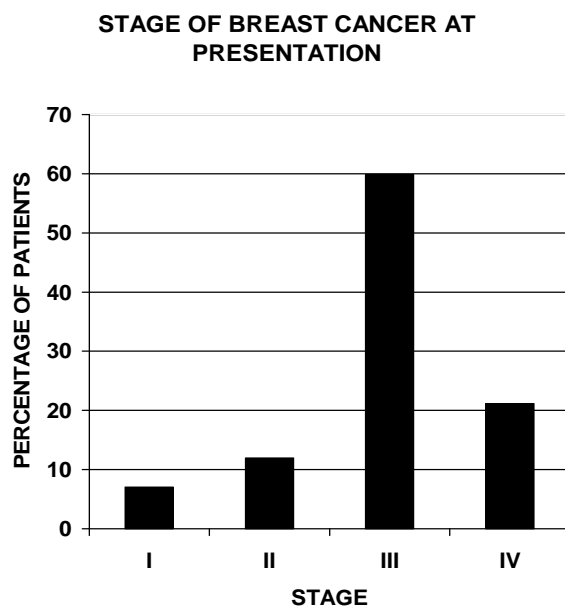


Figure 3:

Diagnostic Modalities

Mammography was done in 47.9% patients and breast ultrasonography in 52.1%, 75% of the mammograms showed lesions that were Birad III or above. Among the ultrasonograms 89% were suspicious for malignancy. FNA was done in all patients.

Treatment

Among the breast cancer patients 69.7% underwent modified radical mastectomy. Radical mastectomy was done in 16.2% patients whereas 14.08% of the patients underwent breast conservation treatment followed by radiotherapy.

The neo adjuvant chemotherapy was given to 50% of the patients with stage III disease and 40% with stage IV disease received, 49% of the patients received adjuvant chemotherapy and 81% received adjuvant radiotherapy.

DISCUSSION

Breast cancer is the leading cause of cancer related mortality in Pakistani women. Unfortunately, a large proportion of the disease affects young women of childbearing age. The mean age of women with breast cancer presenting at our health facility was 34.56 years \pm 11.5 years. The majority of our patients presented at 30 years to 39 years of age. The mean age of our patients at presentation is much lower than the mean age of breast cancer patients reported in Western literature¹²⁻¹⁴. The incidence of breast cancer increases with age, doubling about every 10 years until menopause, when the rate of increase falls dramatically^{1,13,14}. The current literature shows that increasing age is probably the most important risk factor for breast cancer¹⁴. Since a significant proportion (61.9%) of our breast cancer patients are 35 years old or younger, there must be other risk factors that come into play in this group of patients. Hence, we assessed their risk factor profile.

Nulliparity increases the lifetime incidence of breast cancer¹⁴⁻¹⁶. It is associated with a relative risk of ≥ 2 ¹⁵. However, only about 8% of our breast cancer patients were nulliparous. The majority had 3 or more full term pregnancies with the mean number of pregnancies being 4.8. A similar study conducted in India showed that only 4.5% of their breast cancer patients were nulliparous and most women had 3 to 5 full term pregnancies¹⁷.

Family history in first degree relatives is another established risk factor for breast cancer. It is associated with a relative risk of ≥ 2 ^{2,14-16}. A number of mutations including BRCA1 and BRCA2, that may be inherited in an autosomal

dominant manner, predispose a woman to develop breast cancer, usually before the age of 65². Inherited mutations in these two genes account for 4% of all breast cancer cases and about 80% of familial breast cancer⁹. About 12% of our breast cancer patients had family history for breast cancer in first degree relatives. About 5% had 2 or more first degree relatives with breast cancer, occurring at 50 years or less. This figure is similar to that reported by Western studies. Up to 10% of breast cancer in Western countries is associated with genetic predisposition, shown by a positive family history in first degree relatives^{1,4}.

Breast feeding reduces the risk of breast cancer in both pre and post menopausal women but the relationship is less consistent for the latter^{1,8}. A woman's risk of breast cancer is reduced by 4% for each year that she breast feeds⁹. About 70% of our breast cancer patients were breast fed for at least 1 to 2 years. Hence, only a minority (30%) could not have the protective effect of breast feeding.

Most sources agree that there is a small to moderate increase in the relative risk of developing breast cancer in women who are taking combination oral contraceptives until 10 years after stopping the pill²⁰⁻²². It has been seen that the association between oral contraceptive use and breast cancer is more pronounced in younger women (age \leq 35 years)²³. However, only 14% of our breast cancer patients used combined oral contraceptives. Only 4% were current users and 10% gave history of use in the past, all within the last 10 years. The mean duration of use was 2.5 years and all patients had used the pill for 5 years or less.

Various studies show that the cancers diagnosed in women who have used combination oral contraceptives are mostly localized tumors and present at initial stages^{13,20}. However, most of our breast cancer patients who had used oral contraceptives presented at stage III or IV. This may mean that either the cancer seen in these patients was not related to their oral contraceptive use or breast cancer that occurs in oral contraceptive users in our population is more aggressive. This observation, however, is unlikely to be simply due to a diagnostic delay because all these patients were diagnosed within 1.5 months of developing signs or symptoms of the disease.

From the above discussion, it is apparent that majority of our patients (81%) had none of the above mentioned risk factors for breast cancer. This may be mentioned that 10.6% had only 1 risk factor and 8.4% had 2 risk factors for breast

cancer, in any combination. None of the patients had more than 2 risk factors. Some other studies have also shown similar results, stating that most of their patients have none of the established risk factors for breast cancer. This interesting observation may be explained by the fact that a large number of our patients are \leq 35 years old and in this age group, the contribution of the established risk factors has already been questioned by many authorities⁵⁻⁹. Hence, there may be some other risk factors that contribute to the pathogenesis of breast cancer in our population, which are yet unknown.

Breast cancer is the second most common malignancy seen in pregnancy, the commonest being cervical cancer. The incidence is 10 to 39 per 100,000 pregnancies^{24,25}. Longsdon et al have reported that 10-15% of the women under 44 years develop breast cancer and 3% will coincide with pregnancy²⁴. However, the incidence of breast cancer in all age groups is rising and pregnancy associated breast cancer is anticipated to increase^{24,26}. In our series, 5 out of 142 patients with breast cancer presented during pregnancy. They were between 22 and 27 years old. Only one was primigravida. The rest had an average of 3.5 pregnancies and were breast fed for at least 2 years. None of them had family history of breast cancer.

Breast cancer in pregnancy poses a diagnostic challenge. Mammography is not very useful for diagnosis of breast cancer in pregnant women because there is increased glandularity and a higher water content of the breasts with an increase in parenchymal density²⁴. Hence, mammography has a low sensitivity in pregnancy with a high false negative rate^{24,26}. Breast ultrasonography and FNA are useful diagnostic modalities. In case of an inconclusive FNA, excision biopsy can be done to confirm the diagnosis²⁴. All 5 of our pregnant patients had breast ultrasonography done, followed by FNA, which was conclusive for malignancy in all cases and excision biopsy was not required in any patient.

It has been shown that the outcome for breast cancer in pregnant women is the same as for non-pregnant patients when matched for age and stage of the disease^{24,26}. However, pregnant women present at a more advanced stage and a significantly higher proportion have lymph node involvement at presentation^{24,27}. Hence, breast cancer in pregnancy is associated with a poorer prognosis^{25,26}. This is consistent with our data which shows that 4 out of 5 pregnant women presented with stage III cancer and 1 presented

with stage IV disease. Modified radical mastectomy was performed in 4 patients and radical mastectomy in one. Adjuvant chemotherapy and radiotherapy were postponed till after delivery in order to avoid any potential harm to the fetus.

In **conclusion**, breast cancer, in our experience, affects the younger women more commonly than the older ones. Most of our patients do not have any of the mentioned risk factors for breast cancer, showing that the contribution of the classical risk factors to the disease in our population is not substantial. Hence, in clinical practice, the index of suspicion for breast cancer should be independent of the risk factor profile of the patient. Majority of our patients present at an advanced stage. Therefore, the importance of self examination of breast should be emphasized and the practice should be promoted. There is a need for a greater awareness of the disease, particularly among young women.

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