Original Research Article

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The dilemma of delayed presentation in breast cancer: a perspective from the Radiology department of a developing country of Asia

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ABSTRACT

Background: In Asia, Pakistan has the highest incidence of breast cancer with 1 in 8 women will develop breast cancer at some stage of their life. Delays in presentation and diagnosis are major determinants of breast cancer survival, but these have not been comprehensively investigated in Pakistan.

Methods: A cross-sectional study was done from June 2017 till October 2018 at Radiology department of Bolan medical complex hospital in Quetta, Pakistan. Patients with breast cancer above the age of 18 and below 70 years were interviewed who were diagnosed with breast cancer. The time interval between self-detection and deciding to seek care was defined as delayed if the woman presented to a health care professional three months or more after detecting an abnormality

Results: A total of 86 breast cancer patients fulfilling the criteria were included in the study. Of these, 34% presented to physician within 3 months of appearance of symptoms, 68% patients presented with a delayed of more than 3 months. Presentation delay was due to financial issues which were seen in 30 patients. 18 patients (20.9%) showed delayed to due difficulty in reaching hospitals, 16 patients (18%) stated delay due to prior use of alternative therapies. Embarrassment and spiritual belief constituted 4.6% cases. 51% and 36% presented with stage III and IV disease out of which majority belonged to poor socio-economic status.

Conclusions: The findings suggest that majority of the patients with breast cancer presented late and this has significant effect on their disease prognosis. Most cases of breast cancer presented in advanced stage probably due to poor economic status, difficulty in reaching hospital, illiteracy and negligence by patient or family.

Keywords: Breast cancer, Asia, Delayed presentation, Illiteracy

INTRODUCTION

The incidence of cancer is increasing though out the world, with new cancer cases and cancer-related mortality mostly occurring in low- and middle-income countries (LMIC). It is estimated that by 2035, two-thirds of new cancer diagnoses will occur in developing countries. Breast cancer (BC) remains the leading cancer diagnosis and cause of cancer-related deaths among women globally. There was increase in new breast cancer cases by more than 50% worldwide from 1980 to

2010, with more cases reported in low-and middle-income countries, where more than half of BC cases now occur. It is further noted that young women are disproportionately affected in LMICs, such that 23% of new breast cancer cases occur among women age 15 to 49 years in LMICs versus 10% in high-income countries, the reasons for which are multiple including lack of breast cancer awareness, early detection, poverty, cultural and religious beliefs, misconceptions about the disease and fear of mastectomy in these countries. There is further lack of availability of screening mammography

and proper health care systems in LMICs. Clinical breast examination is recommended by International guidelines as a preferred approach.³ In country like Pakistan awareness about self-examination could be an effective approach to early diagnosis of breast cancer. More than half of women with newly diagnosed breast cancers have stage III or IV disease in LMICs due to lack of awareness and proper resources.³⁻⁵

In this study we discuss multiple factors resulting in delayed diagnosis of breast cancer patients. Socioeconomic, educational status, inability to reach hospitals, ignorance about the disease, non-specific treatments, spiritual beliefs has played significant role in delay of breast cancer patients. Delayed presentation due to the economic status and lack of basic necessities causing patients to have problems in reaching hospitals have played a major role.

METHODS

A cross-sectional study was done from June 2017 till October 2018 in Radiology department of a tertiary care Bolan Medical Complex Hospital in Quetta, Pakistan. Female patients with breast cancer above the age of 18 and below 70 years were interviewed who were diagnosed with breast cancer clinically and after radiological investigations. Further histopathology confirmation was also done. Ethical approval was obtained.

For this study, the time interval between self-detection and deciding to seek care was defined as delayed if the woman presented to a health care professional three months or more after detecting a breast abnormality.

Newly diagnosed breast cancer patients were asked particular questions specified in the questionnaire. The short face to face interview included questions in regional language about age, income level, educational and marital status, family history of breast cancer, etc. The patients were also asked to specify the first presenting symptom and period from first onset of symptoms to first medical consultation. Based on the family monthly income patients were divided into low class<10000 PKR/month, middle class 10,000 to 50,000 PKR/ month and high class as >50,000 PKR/month. The education levels were defined as low (primary or below), Middle (matric/intermediate) and high (graduate and above).

Overall, 86 patients were interviewed during the study period and 5 patients were excluded from the study based on exclusion criteria, i.e., age above 70 years and presence of non-cancerous lumps and inadequate information according to the questionnaire.

RESULTS

A total of 86 breast cancer patients fulfilling the criteria were included in the study. Of these, (Table 1) 34%

presented to physician within 3 months of appearance of symptoms. 68% patients presented with a delayed of more than 3 months. Presentation delay was due to due to financial issues and low socioeconomic class which was seen in 30 patients (34.8%). 18 patients (20.9%) showed delayed to due reasons of difficulty in reaching hospitals stating clinic/hospital was too far away and 16 patients (18%) stated delay due to prior use of herbal or alternative therapies. Ignorance of disease was seen in 10 patients (11.6%) which made up the 4th highest cause of delayed presentation. Embarrassment (4 patients) and spiritual belief (4 patients) constituted 4.6% cases of delayed with patient being shy to visit a doctor or pressure of the family, in laws to explain her symptoms and felt hesitant about undergoing surgical procedures. Deficiency of health care providers and easy availability of spiritual healers, patients believed that they have been spiritually healed. Even the educated class has misconception that healers can channel healing energy to a patient. Two patients, 2.3% informed us about events in the family, too busy in family affairs and non-specific medical treatment resulted in delay.

Table 1: Reasons for delay in diagnosis.

Reasons for delaying in presentation	Frequency (%)	
Financial issues	3 (34.8)	
Difficulty in reaching hospital	18 (20.9)	
Herbal/Alternative therapies	16 (18)	
Ignorance about disease	10 (11.6)	
Embarrassment	4 (4.6)	
Spiritual belief in healing	4 (4.6)	
Events in family	2 (2.3)	
Non-specific medical treatment	2 (2.3)	

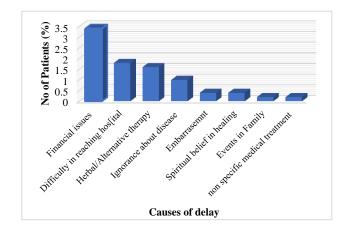


Figure 1: Reasons for delay in diagnosis.

Table 2 explains the presenting symptoms and duration of delay. 53 patients (61%) had a painless lump out of which 13 patients (24%) presented within 3 months to seek medical consultation and 40 patients (75.4%) presented with a delay stating that as it was painless so didn't attracted much of her attention. 15.1% presented

with lump in the armpit, 10.4% with redness and swelling over the breast and 5.8% with nipple discharge.

Table 2: Frequency of patients presenting with symptoms and duration of presentation delay.

Symptom	Patients	Delay <3 months N (%)	Delay >3 months N (%)
Painless lump	53 (61)	13 (24)	40 (75.4)
Lump in armpit	13 (15.1)	5 (38.4)	8 (61.5)
Change in breast shape	1 (1.1)	0	1 (100)
Nipple discharge	5 (5.8)	1 (20)	4 (80)
Painful lump in breast	3 (3.4)	3 (100)	0
Bone pain	0	0	0
Redness/swellin g over breast	9 (10.4)	6 (66.6)	3 (33.3)
Ulcer over breast	2 (2.3)	1 (50)	1 (50)
Total	86	29	57

51% and 36% presented with stage III and IV disease out of which majority belonged to poor socioeconomic status. None of the low income class patient presented in stage I and II disease. Of these major number of patients were married had 3/4 years of education and common to all were the low social status. It was found that larger number of patients from higher income groups were diagnosed in earlier stage of disease i.e., stage I (3.4%) and II (9.35%) disease with none in stage III/IV.

Table 3: Stage of tumor according to the economic status among patients with breast cancer.

Stage	Poor SEC (%)	Middle SEC (%)	High SEC (%)	Total (%)
I	Nil	2 (2.3)	1 (1.1)	3 (3.4)
II	Nil	6 (6.9)	2 (2.3)	8 (9.3)
Ш	33 (38.3)	11 (12.7)	Nil	44 (51.1)
IV	23 (26.7)	8 (9.3)	Nil	31 (36.0)
Total	56 (65.1)	27 (31.3)	3 (3.4)	86 (100)

Socio-economic class (SEC)

DISCUSSION

Breast cancer is a major health care problem which is thought of as a disease of the industrialized world, however newer studies show that around 45% of breast cancer cases and 55% of breast cancer deaths occur in low and middle income countries. BC incidence has historically, been less common in Asia compared to the West. Many barriers are identified which may correlate

with the lower incidence and higher mortality in LMICs compared to high-income countries. In Pakistan, BC is more common in young females, contrary to the West, where it occurs after the age of 60 years, on an average. The age-related incidence rate of breast cancer in Pakistani women is almost 50.1/100,000 per year. One out of every nine Pakistani women will develop breast cancer during her lifetime. Pakistan has the highest incidence and mortality rates of breast cancer, with incidence and mortality rates >5.2 times and >2.8 times higher, respectively, than the rates within the rest of Asia. Incidence rate of BC was >2.5 times higher in Pakistan as compared to India and Iran.

There are a number of factors resulting in delayed presentation of breast cancer in low income country like Pakistan, few of the common ones are highlighted in our study. In our study group of 83 patients the highest incidence for delayed presentation was financial issues. In a prospective, multicenter, cohort study conducted in the USA, among women who were less than 40 years and were recently diagnosed with BC, 17% reported a selfdelay associated with poor financial status. 11 Among the developing nations, advanced stage of breast cancer at presentation was seen most often in women with low socioeconomic status. 12 The next highest incidence 20.9% is of difficulty in reaching hospital. Most of the Pakistani population lives in rural areas that are deficient in basic necessities such as hospitals, education systems, transport, trained and qualified healthcare providers causing difficulty for these patients. 13 Herbal and alternative therapy also played the 3rd highest role in causing patient delayed in our study. In many cases as medical diagnostic and treatment procedures are expensive, patients go to quacks, hakeems, homeopaths in search for a cheaper remedy and easy accessibility, before actually presenting to a qualified physician. 11.6 % of patients presented late due to ignorance about the disease. As most of the patients belonged to smaller towns, lack of finances and awareness regarding specialist consultation was a reason cited by these patients. 12 There is an assumption among the public that a person suffering from any sort of carcinoma has no chance of survival and there is no treatment available for the cancer. So, a lack of awareness and a lack of education are the further contributing factors for late presentation and increased mortality. ^{14,15} In addition, individuals (breast cancer patients) could not interpret the symptom because they were ignorant about the breast cancer signals.¹⁶ An analysis of the United States (US) SEER-NLMS database revealed that rate of advanced stage cancer amongst patient with lower education was approximately twice that of their more educated counterparts. A study on Uganda's population showed that patients with secondary and higher level of education were less likely to be diagnosed with advanced stage cancer as compared to a patient with no or lower education.¹² Spiritual belief in healing/ embarrassment resulted in 4% of patients delay and events in family and non-specific medical treatment further constituted 2.3%.

Because of social taboos, women with breast cancer feel embarrassment and shyness when discussing breasthealth concerns. Cultural barriers cause married woman to have less access to caregivers. Most of them rely on alternative medicines for treatment. Thereby, not seeking prompt attention for breast problems. 13,17,18

Table 2 shows the initial breast cancer symptoms experienced by patients who were later diagnosed with breast cancer. The most common clinical symptom was the presence of a painless breast lump which was seen in 53 out of total 83 patients. Of these 40 women presented late to seek medical advice, according to them the mass was painless which she didn't take seriously. According to Amri AMA the main presenting symptom of patients with breast cancer was breast mass and 90% or more of Pregnancy associated breast cancer (PABC) and non-PABC had a breast lump either by itself or in association with other symptoms. According to the Merck Manual of diagnosis and therapy, >80% of breast cancer are discovered when a woman feels a lump herself.¹⁹ In Nigeria and Kenya, 12.0% and 23.5% of breast cancer patients respectively delayed because the lump they noticed was painless. 16,20 Second common presentation was mass in the armpit which affected 13 patients out of which 8 had delayed presentation. Five women had complained of nipple discharge. Three presented with painful lump and 2 presented with ulcer on the breast.

Highest percentage of patients (87%) presented to us in stage III and IV disease. Out of these 64.7% belonged to poor socio-economic status. None of the patient with low income class presented in Stage I and II which is further consistent with our findings of financial issues as the major cause of delay in breast cancer patients. In a recent study done in Pakistan, the clinical presentation of patients was highest in advanced stages III and IV amounting to 65.7% in poor societies and 43.6% in middle- and high-income societies. Both of these values are significantly higher than the 18.9% and 11.3% incidence of stage III and IV among African-Americans and American whites, respectively. In another study in Nigeria, 72% of patients presented with stage III or IV disease. In Arab countries, 60 to 80% of cases showed advanced or metastatic stage. In Egypt, stages III and IV constitute 68% of all breast cancer cases. As for Saudi Arabia, stages III and IV constitute about 46% of cases. Efforts aimed at early detection can decrease stage at diagnosis and potentially improve the probability of survival and cure. 6,21 Those who perceived the symptoms as very serious were less likely to delay.

CONCLUSION

Diagnosing cancer at an earlier stage is of grave importance if treatment is to be successful. Majority of the patients in Pakistan presents late because of financial issues, difficulty to reach health care providers, ignorance about the disease symptoms, misconceptions and inappropriate knowledge about the disease and its

management. Failure to understand breast cancer symptoms is again a common cause of delay. To reduce patient delay health education programs regarding breast cancer awareness should be implemented and target women who are at higher risk of delay. Government and health care providers should focus on causes mentioned in the study to remove the barriers resulting in patient delay. With time breast cancer awareness programs would result in reduced overall burden of the disease in Pakistan.

Limitations

The present study had a small sample size and was conducted over a time span of only 17 months compared to the large number of breast cancer patients in Baluchistan population. The study was also limited as patients presenting to Bolan Medical complex hospital were included. Therefore, there may have been a bias in the data related to the regional and background characteristics of the patients. We need to enroll all the tertiary care hospitals, radiation/ oncology centers, histopathology data, NGOs to get a larger data that will be true representative of the population of Baluchistan/ Pakistan.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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