Stage at Presentation of Breast Cancer in Hospital Pakar Sultanah Fatimah Muar – A Retrospective Study

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Abstract: Breast cancer is the most common cancer for women in Malaysia. The knowledge of cancer trends in our country is inadequate. Survival rate of breast cancer depends on the stage at diagnosis. The aim of this study is to characterize breast cancer at presentation in HPSF Muar. A retrospective study where all newly diagnosed breast cancer patients from January 2012 till December 2014 were included. Patients with missing records and patients with recurrent or previous contralateral breast cancer were excluded.110 patients were analyzed. The majority had lump > 2cm in size. Thirty-one patients (28%) had metastasis at diagnosis. Eight patients (7.3%) were not staged because they defaulted after diagnosis or refused to be staged. Malay women presented with more advanced disease compared to Chinese and Indian women (p = 0.052). Ninety-five patients had surgery done (86%). Four patients opted for conservative treatment (3.6%). Ten patients had alternative treatment (9.1%). Twenty five percent of patients were lost to follow up after 6 months (died or defaulted treatment). Breast cancer patients in HPSF Muar present at late stage. More need to be done to educate our population regarding early cancer detection and treatment.
Keywords: breast, cancer, stage, presentation, diagnosis

INTRODUCTION

Breast cancer is the commonest cancer in women in most parts of the world. In Malaysia, there are 18,206 female breast cancer cases from the year 2007-2011 [1]. The cancer burden in Malaysia is likely to increase due to the increasing life expectancy of the population. Knowledge of cancer trends in our country is inadequate and improvements in cancer management are urgently needed.

Survival rate of breast cancer depends on the stage at diagnosis. According to the National Cancer Institute's SEER database, the 5-year relative survival rate for stage 0 is 100%, but for stage 4 it is only 22% [2]. Therefore it is paramount that patients with breast cancer are detected at early stage and managed accordingly.

Hospital Pakar Sultanah Fatimah (HPSF) Muar is a district hospital in the state of Johor, Malaysia established around 1900. The department of surgery serves general surgery service and at the same time serves as a reference for Hospital Tangkak and Segamat. Our breast clinic began its service in 1996. These services include early detection, treatment, education and prevention. In 2009 the number of patients in our breast clinic was 1937 compared with 1638 people in 2008. This data shows an increase of 299 patients. Recent data are lacking and are not easily available due to poor record keeping.

The aim of this study is to characterize breast cancer at presentation in Hospital Pakar Sultanah Fatimah Muar and hopefully we can provide quality information that will be useful for breast cancer care planning in the district.

The diagnosis of breast cancer in this study was done using the triple assessment (clinical examination, radiological imaging and histopathological study). The staging of primary tumour was based on the American Joint Committee on Cancer pathological cancer staging classification, seventh edition [3].

Objectives
- To determine the stage of breast cancer at presentation in our patient population
- To determine the percentage of patients undergoing each treatment type for breast cancer

MATERIALS AND METHODS

This is a retrospective study where all newly diagnosed breast cancer patients from January 2012 till December 2014 were included. Patients with recurrent and previous contralateral breast cancer were excluded. Patients with missing records were also excluded. Patients were identified from our database and records

were traced. Data were then gathered into the standard data collection forms. Data analysis was done using IBM® SPSS® Statistics Version 22. Descriptive statistics were given as frequencies, median, mean, minimum and maximum for continuous variables and as percentages for categorical variables.

Ethics

Permission to carry out this study was obtained from the National Medical Research Register Malaysia (NMRR ID: 16-1027-31259 (IIR)).

RESULTS

From January 2012 till December 2014, a total of 185 patients were identified from our database to be diagnosed with breast cancer. After the exclusions and inclusions criteria were considered, a total of 110 patients were selected for analysis (1 male, 109 female). The patient characteristics are shown in Table I. Malay patients made up the majority (70.9%), followed by Chinese (21.8%) and Indians (6.4%). The mean age at time of breast cancer diagnosis was 54.8 years (median 52.5 years). The age of patients according to the stage is presented in Table II. Most patients presented with breast lump (85.5%) and majority had T2 tumour (40.9%). Invasive ductal carcinoma was present in 87.3% of patients. The mean follow up time was 19.5 months (median, 21 months; range, 0- 36 months).

Table-I: Patient demographics, presentations and cancer characteristics

Baseline characteristics	
Number of patients	
Total	110
Men, % (n)	0.9 (1)
Women, % (n)	99.1 (109)
Race	
Malay, % (n)	70.9 (78)
Chinese, % (n)	21.8 (24)
Indian, % (n)	6.4 (7)
Others, % (n)	0.9 (1)
Age	
Range (years)	31-84 years
Mean (years) [a]	54.8 ± 10.8
Parity	
Nulliparous, % (n)	12.7 (14)
Multiparous, % (n)	68.2 (75)
Not Known, % (n)	19.1 (21)
Presentation	
Breast lump, % (n)	85.5 (94)
Mammogram alteration, % (n)	1.8 (2)
Nipple or skin retraction, % (n)	0.9 (1)
Ulcer, % (n)	2.7 (3)
Swelling or redness, % (n)	1.8 (2)
Pathological fracture, % (n)	0.9 (1)
Others, % (n)	6.4 (7)
Tumour size at presentation	
Tis (carcinoma in situ), % (n)	5.5 (6)
T1 (≤2 cm), % (n)	13.6 (15)
T2 (>2-5 cm), % (n)	40.9 (45)
T3 (>5 cm), % (n)	14.5 (16)
T4 (any size but with extension into skin or chest wall), % (n)	25.5 (28)
Histological type	
Ductal carcinoma in situ, % (n)	5.5 (6)
Invasive ductal carcinoma, % (n)	87.3 (96)
Invasive lobular carcinoma, % (n)	3.6 (4)
Medullary carcinoma, % (n)	1.8 (2)
Mucinous carcinoma, % (n)	0.9 (1)
Not Classified, % (n)	0.9 (1)
n = number, [a] = Mean ± S.D.	

Table-II: Age (years) distribution according to stage of breast cancer

Stage	n (%)	Mean	Median	Minimum	Maximum
0	6 (5.5)	44	43.5	34	56
1	8 (7.3)	60.3	58	48	75
2	38 (34.5)	54.3	52	38	73
3	19 (17.3)	54.4	54	40	77
4	31(28.2)	53.7	52	31	71
Unknown	8 (7.3)	64.6	62.5	49	84

The stage at which our breast cancer patient presented is summarized in Figure I. Twenty eight percent (n=31) had metastasis at diagnosis. Only 14 patients (12.7%) had stage 0 and stage 1 at diagnosis. Eight patients (7.3%) were not staged because they either defaulted after diagnosis or refused to be staged.

Figure II show stage at presentation according to race. Malay women presented with more advanced disease compared to Chinese and Indian women ($p = 0.052$). There was no significance difference in the median age according to stage ($p = 0.05$) (Table 2).
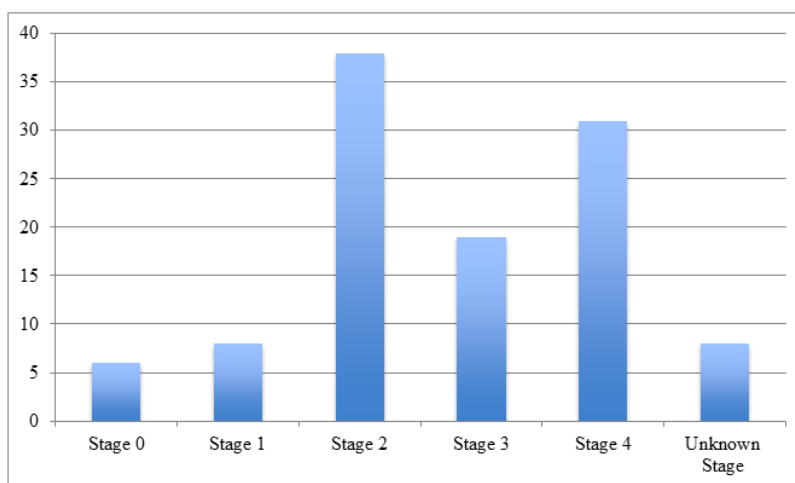

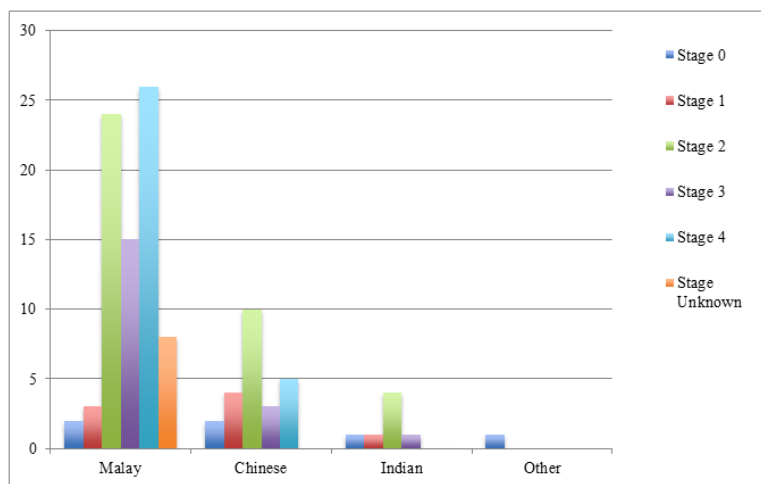**Fig-I: Breast cancer at Hospital Pakar Sultanah Fatimah Muar: stage at presentation (n=110)**

Fig-II: Breast cancer at Hospital Pakar Sultanah Fatimah Muar: stage at presentation according to race (n=110)

Table III refers to number and percentage of patients undergoing each type of treatment. Only ninety-five patients had surgery done (86%). Fifty-nine had adjuvant chemotherapy (53.6%), thirty-eight had adjuvant radiotherapy (34.5%) and forty-five had

hormonal treatment (40.9%). Four patients opted for conservative treatment (3.6%) and ten patients had alternative treatment (9.1%). Twenty five percent of patients were lost to follow up after 6 months (either died or defaulted treatment) (Figure III).

Table-III: Number and percentage of patients undergoing each type of treatment (n=110)

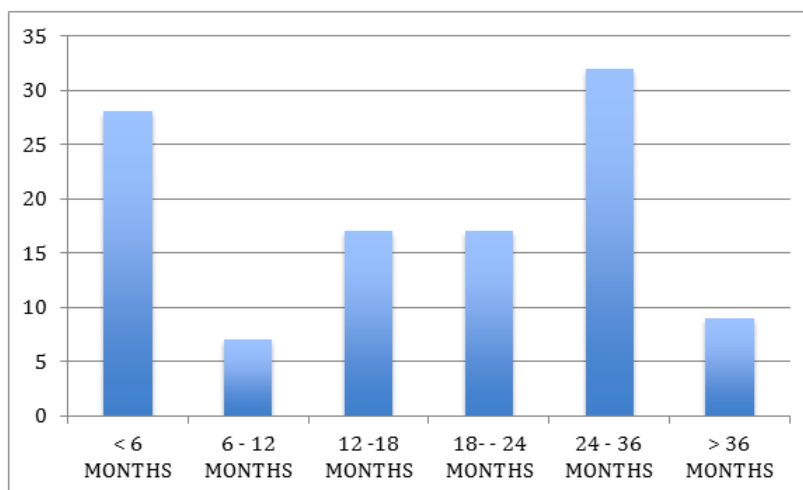| Type of treatment	n	%
Surgery	93	84.5
Adjuvant Chemotherapy	51	46.4
Neoadjuvant Chemotherapy	12	10.9
Adjuvant Radiotherapy	38	34.5
Neoadjuvant Radiotherapy	3	2.7
Hormonal Treatment	45	40.9
Herceptin Therapy	5	4.5
Symptomatic Treatment	4	3.6
Alternative Treatment	10	9.1

Fig-III: Number of patients under follow up months after diagnosis

DISCUSSION

This study has shown that most of our breast cancer patients are diagnosed at a late stage, with advanced breast cancer (stage 3 and 4) presenting in 45.5%. Eight patients were not staged either because they refused to be staged or they default the follow up after the diagnosis, presumably seeking alternative treatment. All these eight patients were Malays. Out of 31 patients with stage 4 cancer, 26 of them were Malays and 5 were Chinese. This finding is similar to the study done by Yip *et al*.[7] who found that Malays present at later stages and with larger tumours [4]. In her study she found that on average women waited 3 months before seeking medical attention. A cross sectional study in by Poum et al showed that 17% of their patients waited longer than 3 months before seeking treatment [5]. Our patients probably waited long before they first consult doctors as evidenced by larger tumours and later stage of cancer, but as this data was not taken for this study, this is unable to be ascertained.

Comparing with our neighbouring country, Singapore, Malaysian patients present at a later stage. Saxena et al found that Malaysian patients were more likely to be diagnosed with late stage (III and IV) disease as compared to patients from Singapore [6]. Across different institutions in Malaysia, a review of breast cancer research in Malaysia done by Yip *et al*. in 2014 found that stage 4 cancers was found in 13.1% patients in Penang (2004-2008), 15.6% in Queen Elizabeth Hospital in Kota Kinabalu and 16.0% in Hospital Kuala Lumpur (2005-2009) [7]. Our current study in HPSF Muar showed that stage 4 cancer was found in 28% of our population, making us the worse so far. We think that this is due to the fact that our hospital is a district hospital. Therefore we assumed that our population has a lower socio-economy and educational background as compared to the patient population in the hospitals mentioned above. Late presentation of breast cancer had been attributed to poverty and poor education [8-10]. Other factors contributing to late presentations are strong belief in traditional medicine [8], fear of mastectomy [11] and spouse/partner constraint [12].

Our current study also revealed that 7% of patients were not staged after diagnosis, another 12% opted for conservative or alternative treatment and we lost a quarter of them at 6 months follow up (either dead or defaulted treatment). For these patients, even if they were diagnosed at an early stage, they were still at a disadvantage because they did not undergo conventional treatment that has been proven to be effective.

Surgery is considered primary treatment for breast cancer. However only 84.5% of our patients actually had the surgery to remove the cancer. The rest either had inoperable tumor or refused for surgery. Fear of mastectomy and strong belief in faith healers and alternative treatment is still very thick in the heart of Malaysian especially among the Malays. It is estimated that up to 80% of Malaysian consult traditional healers at some time in their life for health related issues [13]. According to Muhamad et al the reasons why breast cancer patients seek traditional healers are: recommendation from family and friends, sanction from family, perceived benefit and compatibility, healer credibility and reservation with western medicine and system delay [14].

A cohort study of 155175 women in 2007 showed there were 63% of patients with both estrogens (ER) and progesterone (PR) receptors positive breast cancer, 13% (ER+/PR-) and 3% (ER-/PR+) [15]. Clinical trials have shown that survival advantage for these women is enhanced by treatment with adjuvant hormonal therapy. Assuming this percentage is also true for our study population, so the majority of our patients should be on hormonal treatment but our study revealed that only 40.9% of them are on this therapy.

CONCLUSION

This study showed that breast cancer patients in HPSF Muar present at late stage with more than a quarter have metastasis at diagnosis. Patients who opted for symptomatic or alternative treatment exceeded ten percent. Some patients who initially underwent conventional therapy also default treatment in favour of alternative medicine. We need to be more pro-active in educating our population regarding early cancer detection and treatment.

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