

Characteristics of Iranian Women with Breast Cancer

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Abstract: Breast cancer is the most common malignancy in adult female population. Great variations exist in incidence and mortality rate of this cancer in different populations. One of the most important and central factors that can greatly affect mortality of a cancer in a population is the stage of cancer which comes under medical attention. In this cross-sectional study, we describe characteristics of 1500 cases of breast cancer at the time of diagnosis and evaluate probable association between some factors and stage of cancer in which cancer comes under medical attention. This retrospective cross-sectional study reviewed files of 1500 cases of female breast cancer. These cases had been referred to a breast cancer private clinic and diagnosis of breast cancer was confirmed by pathologic study. Data about following factors were extracted from files: age of patients, educational level, profession, interval between seeking medical attention and diagnosis confirmation, family history of breast cancer in first-degree relatives, method of diagnosis, results of mammography, tumor size, number of involved lymph nodes, total number of resected lymph nodes and pathologic stage of tumor. All data of been obtained at the time of diagnosis. Mean age of patients was 49.38 ± 10.46 years. From patients with known size of tumor, 74.5% had a size of >2 cm in the population and in patients with known stage of disease, 78.3% of patients were stage 2 or more which means that they had at least one involved lymph node. On an average, an interval of 2.73 ± 1.15 years existed between the time of suspicion and time of definite diagnosis. Finally we conclude that stage of breast cancer at presentation is higher in our country when compared with western countries. This difference is both the result of lower compliance of patients and defects in public services.

Key words: Breast cancer, pathology, women, risk factor, tumor, Iran

INTRODUCTION

Breast cancer is the most common malignancy in adult female population, with an incidence of more than one million cases and mortality rate of nearly 600,000 cases in a year, worldwide. Great variations exist in incidence and mortality rate of this cancer in different populations. Factors such as age, gender, race, ethnicity, time, socioeconomic class, marital status and geographic location have been shown to be effective factors in this diversity (Armstrong, 1976; Karjalainen and Pukkala, 1990; Coleman *et al.*, 1993, 2003; Schrijvers *et al.*, 1995; Chu *et al.*, 1996; King and Schottenfeld, 1996; Gatta *et al.*, 2000; Sant *et al.*, 2001; Ferlay *et al.*, 2002). But one of the most important and central factors that can greatly affect mortality of a cancer in a population is the stage of cancer which comes under medical attention (Vernon *et al.*, 1985; Richardson *et al.*, 1992; Camon *et al.*, 1993).

In this cross-sectional study, we describe characteristics of 1500 cases of breast cancer at the time of diagnosis and evaluate probable association between some factors and clinical and pathologic stage of cancer which comes under medical attention.

MATERIALS AND METHODS

This retrospective cross-sectional study reviewed files of 1500 cases of female breast cancer. These cases had been referred to a breast cancer private clinic and diagnosis of breast cancer was confirmed by pathologic study.

Data about following factors were extracted from files: age of patients, educational level, profession, interval between seeking medical attention and diagnosis confirmation, family history of breast cancer in first-degree relatives, method of diagnosis, results of mammography, tumor size, number of involved lymph nodes, total number of resected lymph nodes and pathologic stage of tumor. All data were obtained at the time of diagnosis. For statistical analysis, patients were categorized to six groups regarding their age (≤ 29 , 30-39, 40-49, 50-59, 60-69 and ≥ 70 years). Whole process of data extraction was checked to be confidential. Staging of breast cancer was based on sixth edition of cancer staging manual of American Joint Committee on Cancer (AJCC) (Green *et al.*, 2002).

Numerical variables were presented as mean \pm SD, while categorized variables were summarized by absolute

frequencies and percentages. For the statistical analysis, the statistical software SPSS version 13.0 for windows (SPSS Inc., Chicago, IL) was used. Existence of relationship between nominal by nominal variables was tested by χ^2 -test. Existence and strength of relationship between ordinal-ordinal variables was tested by Kendall's tau-c test. All p-values were 2-tailed, with statistical significance defined by $p \leq 0.05$.

RESULTS AND DISCUSSION

In this retrospective cross-sectional study; we evaluated files of 1500 cases of breast cancer. After describing characteristics of these cases, we analyzed association between some of these characteristics.

Data regarding age of 1454 cases existed. Mean age was 49.38 ± 10.46 years. Histogram curve related to age of patients has been shown in Fig. 1. The most common educational level in this population was diploma. Frequency of different educational levels in patients has been shown in Table 1. The most common professions affected by this cancer were housekeeping and teachers (Table 2). Frequency of different professions in the patients is also shown in Table 2. On an average, an interval of 2.73 ± 1.15 years existed between the time of suspicion and time of definite diagnosis. About 1065 (71%) patients had no family history of breast cancer in their first-degree relatives and 396 (26.4%) patients had positive family history. Data regarding family history of 39 (2.6%) patients was not available. Information on the clinical stage of tumor i.e., tumor size and number of involved lymph nodes has been shown in Table 3 and 4. The most common reason that had brought patients under medical attention was lump detection. Frequency of different presentations of tumor has come in Fig. 2. We found pathologic report of 1468 (99.1%) patients in their files. A great number of patients (68.6%) were at stage 2 in the time of Diagnosis. Frequency of different stages at the time of definite diagnosis has been shown in Fig. 3.

There was negative relationship between age category and level of education as independent variables and stage of disease at presentation as independent variable. Also significant difference was found between patients with different diagnostic methods in their stage of disease at presentation.

Mean age of the population was approximately forty nine and fifteen percent of patients were under age of forty. This mean age at presentation is lower than figures reported for western countries and is similar to figures reported for ethnic minorities in these countries (Wainchester *et al.*, 1998; El-Taimier and Wait, 1999;

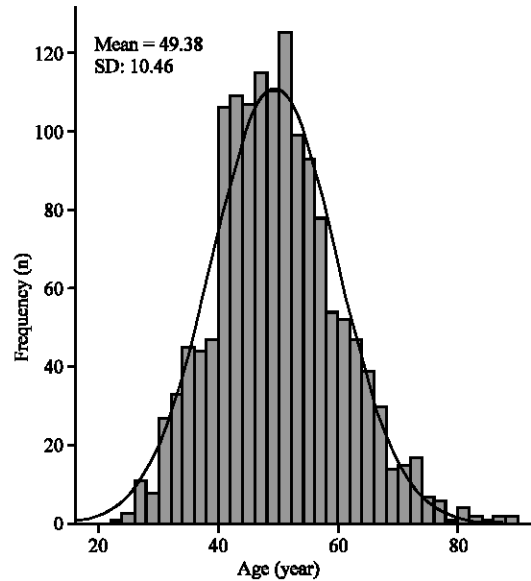


Fig. 1: Histogram showing age distribution of study population

Table 1: Frequency of different levels of education in the population

Level of education	Frequency	Percentage
Illiterate	89	5.9
Elementary	311	20.7
High school	8	0.5
Diploma	563	37.5
Associate's diploma	96	6.4
University/higher education	431	28.7
Total	1498	99.9
Unknown	2	0.1
Total	1500	100.0

Table 2: Frequency of different professions in the population

Profession	Frequency	Percentage
Housewife	784	52.3
Educational (teacher)	331	22.1
Medical staff	112	7.5
Employee	221	14.7
Other	47	3.1
Total	1495	99.7
Unknown	5	0.3
Total	1500	100.0

Table 3: Frequency of different tumor sizes at presentation

Tumor size in cm	Frequency	Percentage
<2	478	31.9
2-4	584	38.9
≤4	283	18.9
Total	1345	89.7
Unknown	155	10.3
Total	1500	100.0

Table 4: Frequency of different numbers of involved lymph nodes at presentation

No. of lymph nodes involved	Frequency	Percentage
0-3	1029	68.6
4-10	252	16.8
10<	76	5.1
Total	1357	90.5
Unknown	143	9.5
Total	1500	100.0

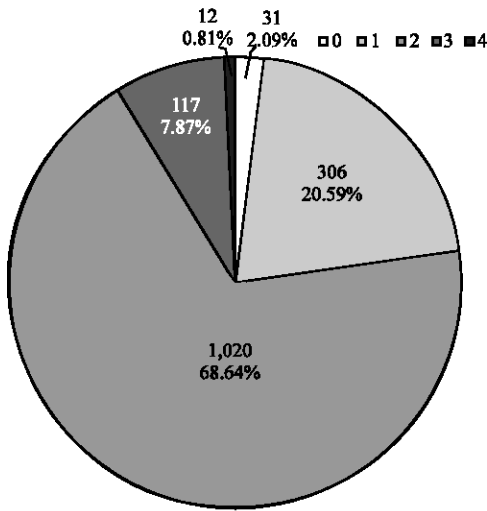


Fig. 2: Showing percents of different pathologic stages in which diagnosis of cancer has been confirmed

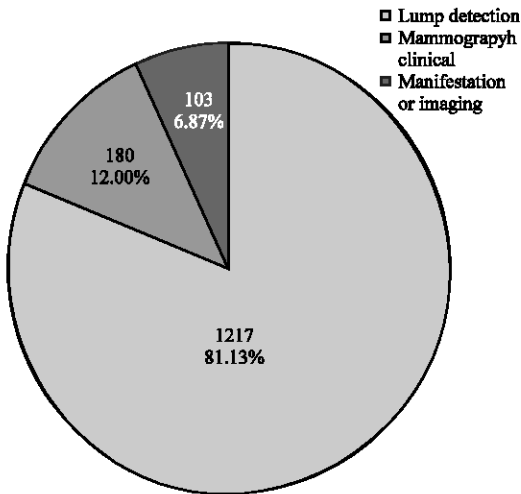


Fig. 3: Frequency of different diagnostic methods which have guided patient to seek medical care

Hedeem and White, 2001; Johnson, 2002; Velikova *et al.*, 2004). This fact can be explained in two ways; first one is that because of ethnic differences such as earlier age of menarche, this cancer affects younger patients in these ethnicities.

But Second reason can be general younger age of population of our country similar to population of minorities in western countries. Whatever the reason is, this facts shows that screening programs should start at an earlier age in our country.

From patients with Known size of tumor, 74.5% had a size of >2 cm in the population and in patients with

known stage of disease, 78.3% of cancers were at stage 2 or more which means that they had at least one involved lymph node. In comparison with data in western countries (Hedeem and White, 2001; Johnson, 2002; Velikova *et al.*, 2004), these figures show that the patients receive medical care for breast cancer in a higher stage of disease which adversely affects prognosis of this cancer in the population.

Mean time from the first visit of doctor to definite diagnosis in the population was 2.73 ± 1.15 years. This figure is also when compared with same figure in western countries is much higher (Velikova *et al.*, 2004). These figures seem more meaningful when we consider that method of detection of cancer was mammography in only 12% of the cases and when we see that patients who have been diagnosed by mammography are in lower stages of cancer.

In statistical analysis showed that diagnosis of cancer in later ages occur in earlier stages. This is probably because of higher level of suspicious for cancer in these groups of women, wider use of mammography in older patients and more accuracy of this diagnostic method in these ages.

Negative relationship between level of education and stage of disease has been shown in previous studies as well as this study (Chu *et al.*, 1996). This relationship is probably the result of higher income or higher degree of attention to health.

If the data about the incidence of this cancer and survival of patients in the study was available, it was possible to perform more complete analyses which can be target of further studies.

Although, the data shows that these delays in receiving treatment for breast cancer is the result of defects in either patients or medical services but to definitely comment on role of these factors, more investigations are necessary.

CONCLUSION

Finally, it is concluded that stage of breast cancer at presentation is higher in our country when compared with western countries. This difference is both the result of lower compliance of patients and defects in public services.

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