Age distribution and age shift of breast cancer patients visiting the Basrah breast cancer centre

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ABSTRACT

Background: Breast carcinoma is a common malignancy in women. It is the second leading cause of cancer death following bronchogenic carcinoma. The incidence of breast cancer is lower in the developing countries. The age at presentation, disease stage and pathological behaviour varies in between different countries. The mean age at presentation of breast cancer in developing countries one decade earlier than developed countries. This analytical study was conducted to explains the age distribution pattern of breast cancer in Basrah, Iraq.

Patients and methods: A prospective analytical study of eight hundred twenty-eight patients with breast cancer conducted in Iben Gaswan Teaching Hospital, Basrah, Iraq during the period between January 2007 and December 2018. The data were analysed concerning with the age at presentation, the mean and median age at diagnosis and annual percentage of breast cancer.

Results: Breast carcinoma was more common in patients age group between 41 years to 45 years. More than 62% of the patients present below the age of 50 years. The mean age at the time of diagnosis of the breast cancer patients were 48.43 year. The mean age at presentation become more with the advancing age.

Conclusion: Age at diagnosis one decade earlier than the developed countries and it became more in the older age in the subsequent years. Breast screening program should be started before the age of fourteen.

Key words: breast cancer, biological behaviour, screening, ultrasonography

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INTRODUCTION

Breast cancer remain the most frequently occurring malignant tumour in women. Over the last three decades universally, breast cancer still the number two leading cause of cancer death following the bronchogenic carcinoma among woman [1-3]. For both developed and developing countries, breast cancer becomes a big problem [4]. Although the incidence of breast cancer is lower in the developing countries, but the mortality is higher, and the overall prognosis is worse [3]. Since the mid-1940s the incidence of new cases of breast cancer has been steadily increasing, in 2012 approximately 1.7 million new cases were diagnosed representing about 12% of all new cancer cases and 25% of all cancer in women [5,6]. In United States the breast cancer was estimated at 1 in 13 in 1970, it was 1 in 11 in 1980 and the frequency was 1 in 8 in 1996 [7]. There is wide difference regarding the age at presentation, stages of the disease and biological behaviour of breast cancer between different countries, of these variation the in situ carcinoma become more at presentation in the developed countries, while the locally advanced and distant metastatic disease still more common in the developing world [8,9]. The mean age at presentation of breast cancer varies between developed and developing countries and even in the same mainland of not fully obvious and understood reasons. In this study aims to clarifies the age distribution pattern of breast cancer in Basrah, Iraq and looking to the epidemiological difference with the nearby countries and main lands.

PATIENTS AND METHODS

This is a prospective analytical study using secondary data, includes a total number of eight hundred twenty-eight patients with breast carcinoma, who were documented and followed on during the period between January 2007 and December 2018 in the breast disease centre in Iben Gaswan Teaching Hospital, Basrah, Iraq. All patients diagnosed with breast carcinoma excluding those with benign tumours and stromal malignancy. The case files of the diagnosed breast cancer patients were reviewed with the respect of clinical, pathological and demographic information. In this study the data were analysed using SPSS software version, concentrating on the age at presentation, the mean and median age at diagnosis and percentage of breast cancer annually in this sample.

RESULTS

A total number of 828 patients were consisted in this study. The 41 years to 45 years is the most age group be affected by the

disease, 153 from 828 (18.5%). Number of patients in each age groups ≤ 30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65 and ≥ 66 were 23, 72, 136, 153, 133, 88, 88, 57 and 78 respectively. The mean age of presentation was 48.43 year (SD=11.65), ranging from 44.97 years to 52.60 years. The median was 47 years and the age field starting from 24 years to 91 years. At the time of diagnosis majority of patients 62% (517 from 828) were younger than 50 years. The mean age at presentation subsequently become more as the years advancing afterward as shown in Tables 1-4 and Figure 1.

Tab. 1. frequency of breast cancer patients whose visit the breast centre annually.

Year	Frequency	Percent
2007	28	3.4
2008	38	4.6
2009	67	8.1
2010	70	8.5
2011	95	11.5
2012	102	12.3
2013	85	10.3
2014	84	10.1
2015	66	8
2016	75	9.1
2017	60	7.2
2018	58	7
Total	828	100

Tab. 2. Age distribution pattern among breast cancer patients.

Age group/ years	Frequency	Percent
Thirty years or less	23	2.8
From 31 to 35	72	8.7
From 36 to 40	136	16.4
From 41 to 45	153	18.5
From 46 to 50	133	16.1
From 51 to 55	88	10.6
From 56 to 60	88	10.6
From 61 to 65	57	6.9
Sixty-six years or more	78	9.4
Total	828	100

Tab. 3. The mean age of the breast cancer patient each year

Year	N	Mean Age/ years	SD	F	Sig.
2007	28	45.96	12.51		
2008	38	44.97	9.73		
2009	67	47.58	11.27		
2010	70	47.37	12.01		
2011	95	46.95	12.07		
2012	102	47.75	12.06		
2013	85	51.02	12.37	1.787	0.05
2014	84	48.56	11.73		
2015	66	48.41	9.92		
2016	75	49	10.91		
2017	60	48.87	10.96		
2018	58	52.6	12.35		
Total	828	48.43	11.65		

Tab. 4. Age/ years.

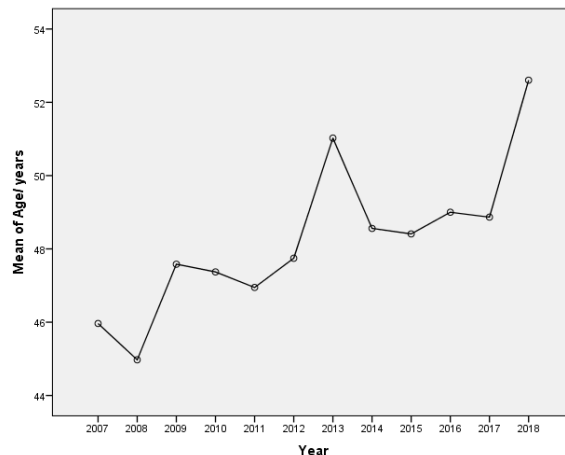| Year	N	Median
2007	28	42
2008	38	42
2009	67	45
2010	70	45
2011	95	44
2012	102	44.5
2013	85	50
2014	84	47
2015	66	47
2016	75	47
2017	60	49
2018	58	50
Total	828	47

Fig. 1. Annual mean age pattern figure

DISCUSSION

Age is one of the paramount risk factors for the development of breast carcinoma. There are many difference between the world regions with the respect of age at diagnosis, stage of the disease and biological behaviour. One of the constant observations in the breast carcinoma it increases with advancing age [8]. The hazard of developing breast cancer become more with the increasing age and most breast cancer happen in patients older than 50 years' age [10].

One of the main patients' characteristics in this breast cancer sample were younger age at diagnosis and the peak age group between 41 years to 45 years (18.5%), and 62.5% of the patients below the age of 50 years. The finding from eleven published articles from 8 Arab countries (Bahrain (1), Algeria (1), Kuwait (1), Libya (1), Lebanon (1), Saudi Arabia (4), Tunis (1) and Sudan (1)) shows that 65.5% of the patients under the age of 50 years [11].

Many epidemiological published studies at local and global levels recommend that breast cancer in Asian women occur at an earlier premenopausal age when compared with western women who get breast cancer later during menopause [12,13]. Breast cancer in United Kingdom become higher with the advancing age and about 80% of the patients exceeding 50 years with the peak age between 50 years to 64 years, and majority of breast cancer patients in Europe presented at postmenopausal age [14,15]. The same finding obtained from the United State, that approximately 50% of all newly diagnosed cases are after the age of 63 years [16].

The second finding from this study that the mean age at diagnosis was 48.43 year (SD=11.65), ranging from 44.97 years to 52.60 years which slightly lower than the result of other study done in Iraq (52 years) [17]. And it nearly comparable with the mean age of some Asian and African countries, it was (47 years to 48.6 years) for Saudi Arabia women, (49.8 years) in Pakistan, (47.1 years to 48.8 years) for Iranian women, (46 years) in Libya and (49.8 years) for Lebanon [18-22]. While it slightly less than other nearby countries like Jordan women (50.1 years), Palestinian women (51.5 years), Asian origin Sephardic Jews (53.4 years), European origin Ashkenazi Jews (55.9 years) [23,24].

In contrast the mean age of breast cancer in developed and western countries about 63 years, at least one decade older than the developing countries [25].

The median age at diagnosis of breast cancer in our study was 47 years ranging from 42 years to 50 years. It is less than other Iraqi study which is 49 years and nearly it lies in between other Asian countries. For Asian Arab counties it varies from 44 years in Jordan, 45 years in Saudi Arabia to 48 years in Oman and it was 48.3 years in Thailand, 48 years to 50 years in China and 51 years for Korean women [17,26]. In contrast to the Asian countries the western region has higher median age at diagnosis which is 61 years in the United State of America, and it was 67 years for white British women [27,28].

From these finding the mean and median age at diagnosis of breast cancer in Basrah nearly similar to that of the developing countries and it one decade (or slightly more) younger than the western countries. This similarities of the nearby nations about the age at diagnosis of the breast cancer patients may be related to the environmental, demographic, lifestyle and hereditary factors [29]. According to WHO statistics the median age of Arabic population almost younger by one decade when compared with western countries [30]. The shorter life expectancy in developing countries resulting in a large numbers of younger age breast cancer than their developed counterpart [31]. And many studies reveal that Iraqi women having breast cancer present with earlier age, later stages and behave aggressively when compared with western countries [32].

Early detection program and management is the main step of controlling breast cancer disease. The two standard imaging modalities in the detection and assessment of breast disease are mammography and ultrasonography [33]. Experts suggesting that 35 years and older women examined by mammography, and females younger than 35 years be examined with ultrasonography as the primary imaging technique for early detection [34]. As apprehensible fact that breast cancer screening should be recommence 5 years to 10 years earlier than the age group when the breast cancer is commonly diagnosed, and in the western countries the recommended practice is to commence the breast cancer screening at the age of 50 years [35-37].

In our study the peak age group at presentation between 41 years to 45 years (18.5%) and the second peak between 36 years to 40 years (16.4%) that's to say about 46.4% of the patients below the age of 45 years at time of diagnosis which earlier than the western world. It seems to be implausible and unreasonable to start breast cancer screening at the age of 50 years as the western countries and it should be commenced from the age of 35 years regardless which type of imaging modality be used.

The incidence of breast cancer in respect to the age groups had been changes in some region of the world. In Europe the incidence of the disease during the period 1990 to 2009 had increased among female under the age of 35 years than the older age group between 35 and 39 years [38]. In the United State the incidence of the breast cancer had been increased among the women younger than 40 years of age by 1.47% per year [39].

In this study the mean age at presentation shifted to the older age and it became more with the advancing age through the subsequent years, it started with 45.96 years at 2007 reaching to 52.60 years at 2018, it shifted toward the western population characteristic. These changes may be attributed to the western lifestyle which consist of changing dietary habit, sedentary lifestyle, little or no physical activity, delayed age of marriage. low parity, delayed first pregnancy and non-breast feeding or short breast-feeding time. The westernization of the lifestyle of the developing countries has been considered to be the main cause of increasing breast cancer prevalence globally [40].

There is a prospect of positive association between breast cancer risk and body mass index in women during postmenopausal period. A large population-based study valuating nearly 50,000 women show that summation of obesity, sedentary lifestyle and high caloric intake is a risk factors for breast cancer development which compatible with Iraqi women features during menopause period [41].

CONCLUSION

The age at diagnosis of breast cancer in Basrah nearly comparable with the nearby and other developing countries which is one decade earlier than the western countries, and the presentation age became more in the older age with subsequent years. Breast cancer screening by ultrasonography or mammography in Basrah should be started before the age of fourteen.

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