



Occurrence of Breast Cancer between Women Attending Screening Unit in Benghazi Medical Center in 2018 and 2019

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ABSTRACT

Breast cancer is an important health problem among women and the most common cancers among Libyan females. The breast cancer incidences in Libya were 18.8 and 18.9 per 100,000 females, most of them present with advanced disease. The aim of this study was to estimate the breast cancer frequency among Libyan women who attending the new mammography screening unit in Benghazi Medical Center (BMC). Three hundred and forty-eight (348) screening mammography of normal women who attended this unit in BMC were retrospectively reviewed from 01 January 2018 to 15 October 2019 to collect some relevant data. The collected data was statistically analyzed and Chi square was used and regard significant when $P < 0.05$. From the total of 348 women, the cancer was detected in 12 (3.4%) women with a detection rate of 29.0 per 1,000 women. The mean age was 51 ± 8.8 years. The risk factors such as; women age, menarche age, obesity, breast feeding, family history and use of hormonal contraceptive have no statistically significant association with breast cancer development. Majority of breast cancer women had not been practiced breast self-examination (83.3%) and more than half of them were not examined previously by mammogram (58.3%). From findings of this study, it has been realized that there is need to develop screening program and methods of early detection to minimize the prevalence of the breast cancer; moreover, health education is strongly recommended to improve public awareness.

Key words: breast cancer, breast self-examination (BSE), mammogram, Benghazi, Libya.

Introduction:

Cancer incidence and mortality are rapidly increasing worldwide in both sexes and all ages combined. Breast cancer is the most frequently diagnosed cancer (the second after lung cancer), and the leading cause of cancer-related death among women worldwide.^(1,2,3,4) Incidence rates of breast cancer have been rising for most countries in transition over the last decades, with some of the most rapid increases occurring where rates have been historically relatively low, in transitioning countries in South America, Africa, and Asia.⁽¹⁾ It has been predicted that the worldwide incidence of female breast cancer will reach approximately 3.2 million new cases per year by 2050.⁽³⁾ However, mortality rates are decreasing in most high-income countries.⁽²⁾ These decreasing mortality rates may be attributed to screening and advances in breast cancer therapy over time. Decreases in mortality attributable to screening may be a result of the earlier detection and treatment of invasive cancers.^(4,5)

Breast cancer in Arab world:

Epidemiology of breast cancer in the Arab region is understudied as compared with Western countries. The incidence of breast cancer in Arab women has risen, but is still lower than global averages. The incidence of breast cancer in 2016 among women in the Arab region (28/100,000) was lower than the global mean (46/100,000). Breast cancer accounts for 13–35% of all female cancers in Arab countries;⁽⁶⁾ Lebanon has the highest incidence rate among Arab nations, followed by Bahrain and Morocco.^(6,7)

Breast cancer in Libya:

Studies that have been done in Libya showed that it is the most common cancers among Libyan females^(8, 9, 10, 11, 12, 13, 14). Libyan men were also more likely to be affected by breast cancer than their counterparts from the other North-African nations.⁽¹⁴⁾ The breast cancer incidences in Libya was (18.8 and 18.9) per 100,000 females.^(8,13,15) It is in concordance with results published from other North African countries, in Tunisia (19.6), Egypt (24.2) and Algeria (23.4).^(16,17,18) The overall cancer incidence rate in Benghazi is lower than that in more developed countries, but it is higher than the rate estimated for Libya, according to the GLOBOCAN 2002 database.⁽¹¹⁾ The apparently slow increase in incidence may be related to improved diagnostic practice (mammography and immunostaining) in the last few years in Libya.⁽¹⁵⁾ Most of the patients present with advanced disease.^(9, 11) The average age of breast

cancer patients is low by international standards. ^(14,19) The mean age of breast cancer patients in Libya was 46 years, and premenopausal breast cancer is more common than postmenopausal breast cancer. However, the opposite is true for Europe. ⁽¹⁵⁾

Breast cancer screening:

Methods have been evaluated as breast cancer screening tools are mammography, clinical breast exam and breast self-exam. ⁽²⁰⁾ Guidelines published by the United State Preventive Services Task Force recommend mammography screening biennially beginning at age 50 and ending at age 74 years. ⁽²¹⁾ Routine breast cancer screening does not help prevent breast cancer, but it can help find cancer early when it is most treatable. ⁽²²⁾ For women 40–74 years of age who actually participate in screening every 1–2 years, breast cancer mortality is reduced by 40%. ⁽²³⁾ It is logical to recommend such screening in Libya for the most women, and regular mammograms can begin at the age of 40. ⁽¹¹⁾

This study aimed to determine the frequency of breast cancer among the women attending the screening unit in BMC and outline deficiencies in order to improve breast cancer care in Libya.

Methodology:

A total of 348 screening mammography of normal women in new the screening unit in BMC were retrospectively reviewed. The period of the study was from 01 January 2018 to 15 October 2019. Demographic data (Age, occupation, residence, marital state, nationality, menarche age and menopausal age) were collected. History related to some risk factors of breast cancer was also collected. Weight, height and so body mass index (BMI) were calculated.

Number of women, who underwent the procedure and diagnosed breast cancer, were calculated from the total number of the screened women. The diagnosis of the breast cancer in these cases was based on a mass biopsy and histopathological report. The women with positive finding (with breast cancer) were divided by the total number of the screened women to know the detection rate.

Data analysis:

Data entry and statistical analysis were performed using Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics, such as percentages, frequencies, means, and standard deviations were used to measure the demographic variables, and the data was presented as tables and figures. Analytical statistic like Chi square was used and regard significant when $P < 0.05$.

Results:

Nearly half of participants age group was between (40 – 45), with mean \pm SD (48 \pm 6.8) (Table 1), most of them were married 270 (77.6%), more than half 219 (62.9%) was housewife. Most of the participants 319 (91.6%) their residence was Benghazi city, only 15 (4.3%) cases were from country side of Benghazi, and 14 (4%) from other cities. Nationality of most of attending women were Libyan 322 (93%), and only 26 (7%) non-Libyan. Non-Libyan cases were Egyptian (12 cases), Palestinian (9), Syrians (2 cases), Sudanese (2 cases) and Chadian (1 case). Majority of women were obese I, II, III (41%, 24%, 11% respectively), the remaining women were normal (3.2%) and overweight (21%). Only 71 cases (20.4%) had no children (Table 2). More than half had history of breast feeding 256 (74%). About 108 (42.4%) fed their children for 1-3 years with $M \pm SD$, (2 \pm 1.1). Most of the participant women 190 (54.6%) were with menarche age of more than 12 years, and 57 (58.2%) were with menopausal age of more than 48 years (Table 3). About 231 (66.4%) of women had history of taking oral contraceptive pills (OCP) as method of family planning, and about 73 (62.4%) consumed OCP for 1 – 5 years, 36 (30.8%) took OCP for 6-10 years, and 8 (6.8%) consumed it for > 10 years. Most of them 335 (96.3%) had not used injectable hormone as method of contraception (Table 4). One hundred and forty-four of participants (41.4%) had family history of breast cancer and 20% either their mothers or sisters. Majority of them 284 (81.6%) had not been practiced breast self-examination (BSE), 152 (43.7%) cases and 124 (35.6%) cases were obtained breast ultrasound examination, and mammography examination respectively (Table 5).

Table 1: Distribution of participant women according to age

Women age/years	No.	%	M \pm S.D
40 – 45	151	43.4	48 \pm 6.8
46 - 51	114	32.8	
52 - 57	51	14.7	
58 - 63	21	6.0	
> 63	11	3.2	
Total	348	100	

Table 2: Distribution of participant women according to their number of children

No. of children	No.	%
Non	71	20.4
1 – 4	104	29.9
> 4	133	38.2
> 7	40	11.5
Total	348	100

Table 3: Distribution of participant women according to menarche and menopausal age

Menarche age/years	No.	%
≤ 12	158	45.4
> 12	190	54.6
Total	348	100
Menopausal age/years	No.	%
≤ 48	41	41.8
> 48	57	58.2
Total	98	100

Table 4: Distribution of participant women according to history of taking hormonal contraception

OCP	No.	%
Yes	117	33.6
No	231	66.4
Total	348	100
Injectable hormone	No.	%
Yes	13	3.7
No	335	96.3
Total	348	100

Table 5: Distribution of participant women according to BSE practice, and getting previous breast USS or mammogram examination

Variable	NO.	%
BSE		
Yes	64	18.4
No	284	81.6
Breast USS examination		
Yes	152	43.7
No	196	56.3
Mammogram examination		
Yes	124	35.6
No	224	64.4
Total	348	100

Characteristics of breast cancer cases:

Three hundred and forty-eight (348) women attended the breast cancer screening unit. This cancer was detected in 12 women of them at a rate of 3.44 %. The mean age was 51 ± 8.8 years (Table 6), of which 58.33% were premenopausal. All positive cases were Libyan. Nine (75%) were married, 7 women (58.3%) were house wife, 5 cases (41.7%) were employee, 6 (49.9%) were obese (Table 7), 8 (66.7%) fed their babies, 9 (75%) had a mean age of menarche was above 12.9 ± 1.2 years; 11 (91.7%) did not take hormonal contraceptive, 4 cases (33.3%) had breast cancer family history, 10 (83.3%) had not been practiced breast self-examination, 7 (58.3%) were not examined by the mammogram before. None of the cases practiced regular physical exercise. It has been observed that there was no statistically significant association regarding the women age, menarche age, obesity, breast feeding, family history or use of hormonal contraceptive with developing breast cancer ($p > 0.05$). However, there was a positive statistically significant association between women menopausal age and breast cancer development (p value = 0.040).

Table 6: Distribution of women with breast cancer according to age

Age / years	No.	%
40-45	4	33.4
46- 51	3	24.9
52- 57	1	8.3
58-63	3	25
>63	1	8.3
Total	12	100

Table 7: Distribution of women with breast cancer according BMI

BMI	No.	%
Normal	1	8.3
Overweight	5	41.7
Obese I	4	33.3
Obese II	1	8.3
Obese III	1	8.3
Total	12	100.0

Discussion:

Breast cancer is the most common cancer among Libyan female patients^(11,13, 15, 16). In this current study, it has been shown that 12 cases (3.4%) were detected with breast cancer from total of 348, with mean age was 51 years. The observed age in this study was more than the age that noted in some previous Libyan study (45.4 and 47.5 years) that revealed most of patients are under the age of 51 years, and premenopausal type^(10, 11,14,15,19). On the other hand, it was in compatible with the age that recorded in other Arabic studies (48.5 – 50 years), and in USA and Europe studies where the mean age was around (63 years).^(24,25) However, the observed finding appears to be a decade earlier than in western countries. These results may be attributed to genetic predisposition, environmental and revolution in life style, and hormonal risk factors.

Most of the breast cancer patients in this study were married and multiparous, and fed their babies which were similar to findings that observed by Eramah et al, 2012.⁽¹⁰⁾

The protective and risk factors that associated with this disease such as (age, menarche age, BMI, breast feeding, family history, and using of hormonal contraceptive etc.) were studied in the present work. The results showed that no statistically significant was demonstrated regarding the association of these factors with developing breast cancer ($p > 0.05$). However, there was a positive statistically significant association between women menopausal age and breast cancer development (p value = 0.040). The same observation was concluded in the study that completed in 2012 by Cancer Epidemiology Unit in UK.⁽²⁷⁾

Although, there is a strong risk in relation to family history of breast cancer, and a larger increase in risk among women with a first-degree relative diagnosed before age 50 compared with after age 50 years⁽²⁶⁾, in this study, it has been observed that about 33% of participants (positive cases) had relatives with breast cancer; however, there was no positive statistically significant association between the family history and breast cancer development.

The continuous increase in the incidence of breast cancer death among Libyan women is due to the low level of knowledge of risk factors and methods of early diagnosis for breast cancer⁽²⁸⁾. Moreover, in Libya, there is no systematic approach to early detection due to the low awareness, shortage in health-care system and no expertise.⁽²⁹⁾ Early diagnosis can be successfully achieved by mass screening either by self-breast examination, clinical breast examination, and mammography or by the combination of these three. Although it is well-documented that mammography is the best choice for screening, breast self-examination is also equally important and beneficial for mass awareness especially in a country with limited recourses.⁽³⁰⁾ Women with regular breast self-examination tended to seek medical care more rapidly and to have earlier stages of disease at diagnosis. Unfortunately, the study showed that the majority of the women (83.3%) had not been practiced breast self-examination, and 58.3% of them were not examined by mammogram. Therefore, it is logically to recommend such screening in Libya for the most women, and regular mammograms can begin at the age of 40, but specific recommendations vary by age and risk.⁽¹²⁾

Conclusion:

The study revealed that 12 cases (3.4 %) of breast cancer were detected by screening unit in BMC. The following risk factors; women age, menarche age, obesity, breast feeding, family history and use of hormonal contraceptive had no statistically significant association with breast cancer development. Majority of positive cases had not been practiced breast self-examination, and more than half of them were not achieved previously mammogram examination.

Recommendation:

- The screening program and the methods of early detection are required to be developed to minimize the prevalence of the breast cancer.
- Health education using various method, such as TV is recommended to improve public awareness.

Ethical approval:

This study was approved by the Medical Ethics Committee of the Libyan International Medical University.

Statement of informed consent:

The study was retrospective and informed consent was not applicable. All personal identifiers were stripped from the data and only medical significant parameters were analyzed.

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