Surgical –Audit on breast cancer risk factors in AL-Russafa district in Baghdad

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ABSTRACT

Background: Breast cancer remains a substantial cause of morbidity and mortality, there is a need for continued efforts to understand the etiology of the disease, maintain screening effort, implement prevention strategies, and develop better treatments.

Objective: To analyze the risk factors, improve early detection and prevention of breast cancer in Al-Russafa district- Baghdad, aiming to increase survival rate and improve the quality of life.

Methods: A cross sectional audit of 258 breast cancer cases seen at Al-Elwiya maternity teaching hospital from January2009 to December 2011,data collected from patients files were: age, gender , residency, marital status, parity, age at menarche and menopause age at first live birth, hormonal therapy, social habit, previous breast diseases, breast feeding and family history of breast cancer.

Results: Two hundred fifty eight female diagnosed with breast cancer, age ranging from 20 to 79 years. Breast cancer was more prevalent in the fourth and fifth decade of life. The distribution was according to residency sectors, 10% were unmarried; fourteen percent nultiparous, the age at menarche was prevalent in 12 and 13 years old. Menopausal age was at the fifth decade and age of patients at first live child at twenties. Forty two % received contraceptive hormonal therapy, 15% had previous breast diseases, 20% with family history of breast cancer, 24% non-breastfeeding and 6% smokers.

Conclusion: Risk factors of breast cancer in Baghdad is a perplexing issue and needs a privy analysis as the disease has a para amount importance with increasing incidence in last decade. Knowing the risk factors for breast cancer may help us take preventive measures to reduce the likelihood of developing the disease and develop better treatment.

Keywords: Breast cancer, Risk factors, surgical audit.

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Breast cancer is the most common cancer in women worldwide, accounting for 23% (1.38 million) of the total new cancer cases and thought to be a disease of the developed world [1, 2]. The Middle East and gulf countries show incidence ranging from 22.4%to 49.8%, in Iraq the incidence is 31.1%. According to latest WHO data published in April 2011, breast cancer deaths in Iraq reached 1,678 or o.89% of total deaths. The age adjusted death rate is 19.78 per 100,000 of population ranks Iraq number 52 in the world [3].

Knowledge of the main risk factors for the breast cancer generally divided into three categories: histological types, demographic factors, and genetic mutations; is essential: prompt identification of patients at highest risk for malignancy allows the physician to take vigorous approach from beginning of the diagnostic workup.

Various factors that increased risk for breast cancer have been identified ; these risk factors include female ,increased body mass index >28 kg/m^2, increasing age, lack of physical activity, positive genetic factors and family history of breast cancer , personal history of breast cancer, ionizing radiation (including diagnostic X-ray), Ashkenazi Jews race, diet and life style characteristic of developed countries , early age at menarche, oral contraceptives, older Age at first birth, smoking, low parity, environmental estrogens, non-breast feeding, high fat diet., late menopause, Clomiphene citrate, proliferative lesions of benign breast disease and hormonal replacement therapy[4].

It is estimated that around 7% of all cases can be attributed to inheriting autosomal dominant susceptibility alleles [5]. Two genes were strongly associated with increased risk of breast cancer, BRCA1 and BRCA2 [6, 7].

Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries. The low survival rates in less developed countries can be explained mainly by the lack of early detection programs, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities[8].

Demographic information can also help to determine risk and inform clinical decisions. The Breast Cancer Risk Assessment Tool models that predict a women's chance of developing breast cancer using above risk factors [9]. Gail model: Predicts a woman's likelihood of having a breast cancer diagnosis within the next five years and within her lifetime (up to the age of 90) [10]. Claus Model:Estimates the probability of woman that develop breast cancer over (10-year) intervals based on her family history [11, 12 ,13] . Other Models Other models have estimate a woman's risk of carrying a genetic mutation BRCA 1 or 2 that have importance in prophylactic mastectomy including the BRACPRO [14] Frank [15] and Couch models [16,17].

The Tyrer-Cuzick model [18] and the BOADICEA (Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm) [19, 20, 21, 22]. For women at high risk,

earlier initiation of screening, shorter screening intervals, or the addition of other modalities may provide benefit [9].

The aim of the study was to analyze risk factors, improve early detection and prevention of breast cancer in Al-Russafa district- Baghdad, aiming to increase survival rate and improve quality of life.

Methods. This is a cross sectional audit. Data collected from the first of January 2009 to the end of December 2011, the data collected retrospectively was on 25th of January 2012.The place of the study Early Detection of Breast Diseases Centre at Al-Elwiya Maternity Teaching Hospital.

The study included 258 patients who had breast cancer confirmed by histological examination; all the patients were from Al-Elwiya Maternity Teaching Hospital- AL-Russafa Health Directorate. Data collected included: age, gender, residency, marital status, parity, age at menarche and menopause, age at first live child, hormonal therapy, social habits (alcohol excluded due to social and cultural reasons), previous breast diseases, family history and breast feeding. Triple assessment was used for management. Distribution of breast cancer incidence according to sectors at AL-Russafa District were divided into seven sectors; AL-Sadr ,ALRussafa, New Baghdad , AL-Baladiat, ALSha'ab, AL-Madian and AL-Adhamiya . The assessment by ultrasound imaging was done after clinical examination; this also included the other breast and abdomen to assess synchronous malignancy of the other breast and to stage the disease, mammography was done for 94 patients who were more than 40 year old, fine needle aspiration done in 227 patients and excisional biopsy done in 75 patients. Immune-histochemistry for estrogen and progesterone receptors was done for 13 patients, positive estrogen receptors were found in 5 patients and positive progesterone receptors in 8 patients. Strategies of the treatment depend on the stages of the disease; modified radical mastectomy was done for most of patients and only few patients had conserving surgery done and those with metastasis referred for chemotherapy. Statistical analysis: Regarded to be significant if P-value ≤0.05.

Results. This study involved 258 female patients diagnosed as having breast cancer aged 20 to 79 years. Breast cancer was more prevalent in the fourth and fifth decade of life as shown in table 1. Eighty six percent of total patients with breast cancer were multiparous women as shown in table 2.

The prevalence of breast cancer was more among patients with menarche at age 12 and 13 years, menopause age at sixth decade and 88 %when had first child (20-29) years, those with breast feeding were around 76% and on contraceptive therapy was 58% as shown in table 3.

The percentage of patients with previous breast diseases was 15% and patients with positive family history were 20% and only 6% out of total with breast cancer are smokers. AL-Sadr Sector has more prevalent breast cancer comparing with other sectors as shown in figure 1. Only 10% were unmarried patients as shown in figure 2. Fine needle aspiration help in the diagnosis of malignancy in 202 patients, while the results were suspicious in 23 patients and benign in 2 patients. Invasive ductal carcinoma was the most common type as shown in figure 4. Strategies for treatment depend upon the stages of the disease. Modified radical mastectomy was done for 97% of the patients and 2% had conserving surgery and those with metastasis referred for chemotherapy as neo adjuvant therapy.

Table 1: Number of patients with breast cancer according to age groups (decades).

Values	Breast cancer	Percent	P value
3^{rd}-4^{th}	58	22	0.0005883
5^{th}-6^{th}	159	62	
7^{th}-8^{th}	41	16	
Column total	258	100	

Table 2: Number of patients according to parity.

Values	Breast cancer	Percent	P value
Parus	222	86	0.0000001
Nulliparus	36	14	
Column total	258	100	

Table 3: Number of patients according to major risk factors.

Variables	Breast Cancer	Percent	P-value
Age at menarche			0.739
11 years	11	4	
12 years	73	28	
13 years	88	34	
14 years	49	19	
15 years	28	11	
16 years	9	4	
Column Total	258	100	
Age at menopause			0.916
<45 years	12	11	
45-50 years	23	21	
51-55 years	56	51	
56-60 years	19	17	
Column Total	110	100	
Age at 1^{ST} live child			0.579
< 20 years	89	40	
20-29 years	106	48	
30-35 years	25	11	
36-40 years	1	0.5	
>40 years	1	0.5	
Column Total	222	100	
Breast Feeding			0.869
Non breast feeding	63	24	
Breast feeding	195	76	
Column Total	258	100	
Contraceptive therapy			0.168
Received contraceptive	109	42	
Not received contraceptive	149	58	
Column Total	258	100	

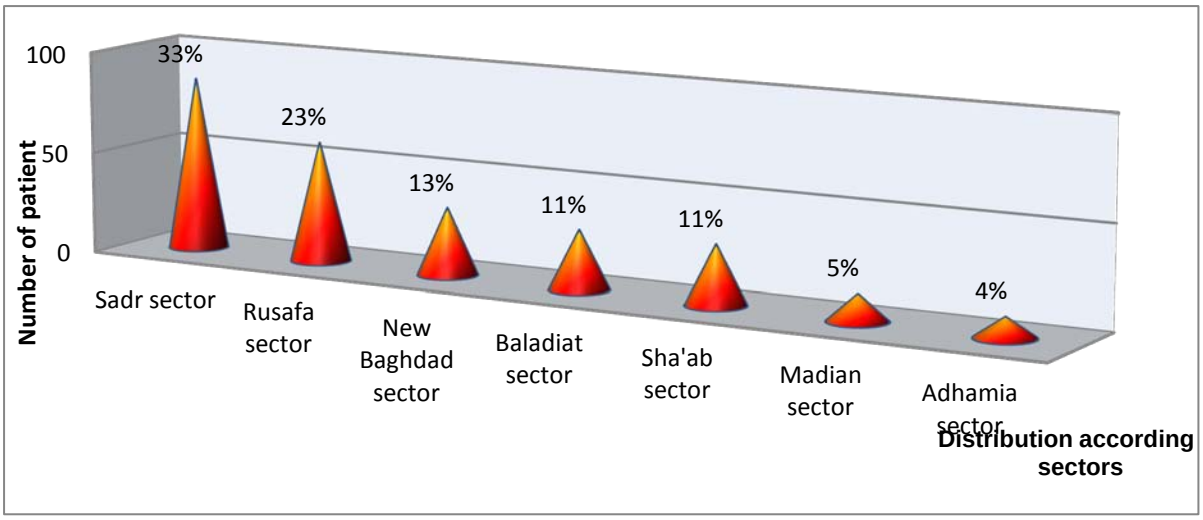

Figure 1: Distribution of breast cancer according to Al-Russafa sectors.

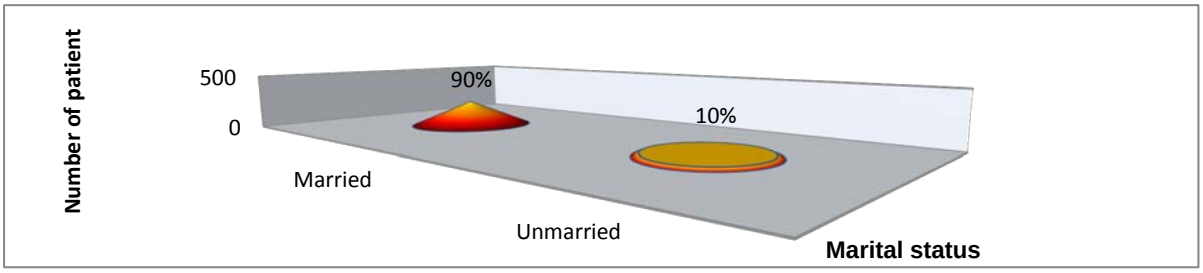

Figure 2: Percentage of patients according to marital statue.

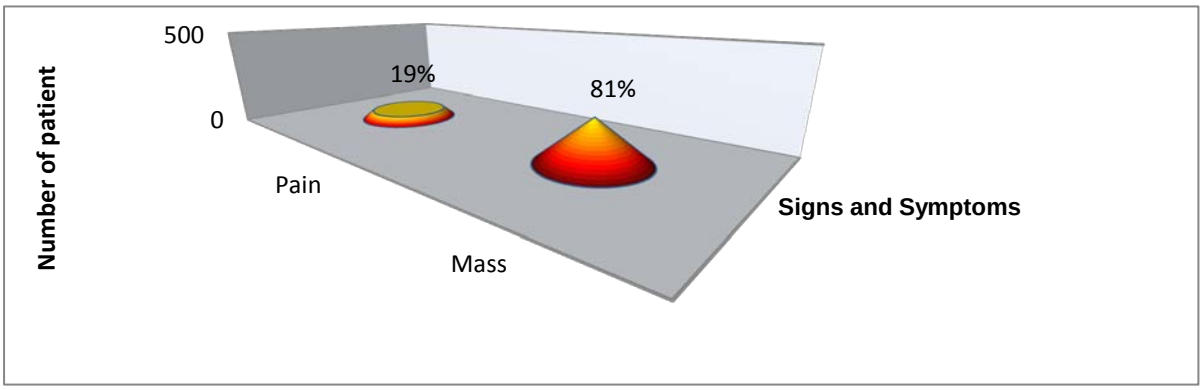

Figure 3: Percentage of patients according to symptoms and signs .

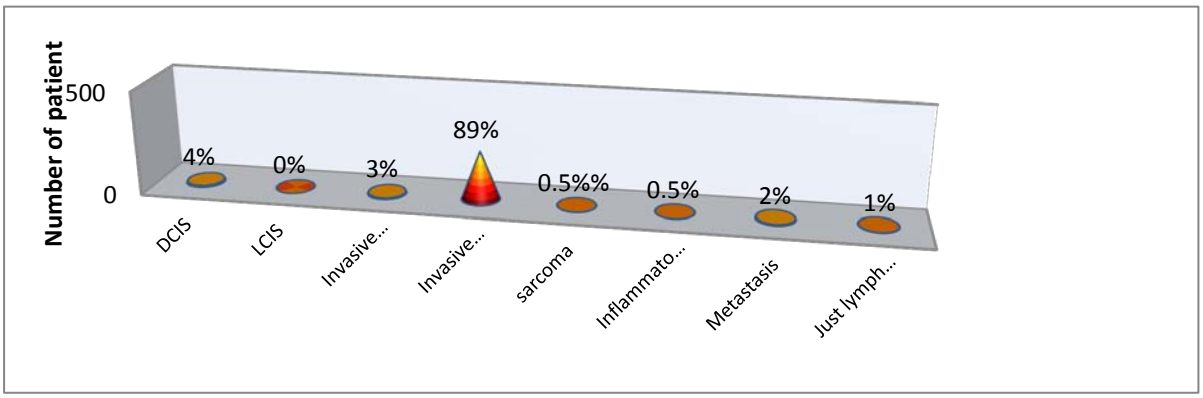

Figure 4: Percentage of patients according to types of malignancy.

Discussion. Among 258 cancer patients, 84% were below 60 years old with a mean age at diagnosis of 45.6 years, this is considered as a young age when compared to developed countries in which the mean age among Jewish women is 55.9 years, while in European women is 61 years [21 .22, 23] .These results might be attributed to, genetic predisposition, environmental factors, changes in life style, and hormonal risk factors which may need further exploration, as when compared with the American Cancer Society [24] .

The significance of parity as a risk factor for breast cancer in our study is due to: 1-Nulliparae are at high risk of developing breast cancer and any risk factor acting on nulliparous or interacting with null parity is relevant for individual risk assessment. 2-Restriction of analysis to nulliparous avoids the possible modifying effect or confounding from full-term pregnancy, and allows a more precise assessment of the role of other hormonal risk factors for breast cancer, such as age at menarche, menstrual cycle pattern, abortions, age at first pregnancy, use of oral contraceptives (OC) and hormone replacement therapy (HRT) in menopause[25]. 3-Lifestyle factors which have been related to breast cancer, such as socio-cultural level, body mass index (BMI), alcohol drinking, physical activity and selected dietary habits may also be influenced by parity and a more precise quantification of these risk factors in nulliparous [4, 9].

Age at menarche shows non-significant difference that may be due to limited sample size and the vast majority of our samples with breast cancer > 12 years and < 50 years where the risk decrease in this age and most of the elderly females are poorly screened where early menarche and the women were exposed to pre-menopausal hormone the greater was her risk [4, 9, 24, 25.]

In spite of Iraqi socio-cultural behavior encourages early marriage, conception, multiple pregnancies and breast feeding and breast cancer risk increased for women with each year full-term pregnancy was delayed [9]; the growing incidence in developing countries reflects the advanced stage at diagnosis , low level of public awareness of the risk for the disease, and poor medical infra-structure and expertise [26].

A small percentage of females used contraceptive for a short and irregular period of time, most of the patients will stop it for all reasons mentioned above, and contraception in all forms shows non-significant difference as it is compared with other studies that indicate within 10 years after stopping use are associated with a small increase in the relative risk, with current use associated with 24 % increase [9].

The poor screening program for breast diseases and documentation, with a small sample size contributed to non-significant difference regarding previous breast disease, many barriers are identified in low and middle income countries that correlate with high mortality these include lack of breast cancer awareness due to poor health awareness and education, lack of screening program due to lack of governmental support and inadequate fund ,social barriers to early diagnosis and treatment due to low priority for women health issue in predominantly patriarchal developing societies , fear of loss of employment and the social taboo of cancers and misconception about cancer treatment and outcomes , lack of standardized treatment protocols with diversity of clinical practice ,health care standards and infrastructure ,and finally poor follow up data and the lack of mortality data [27] .

No significant association of breast cancer with family history when compared with American cancer society [28].This can be explained by poor screening for the patient's family with breast cancer, absence of genetic counseling and poor education[9,27].

The vast majority of the patients deny smoking habit and this explain non-significant difference in our study[9,27] .

This study showed that the highest proportion of breast cancer was in AL-Sadr sector. This finding might be explained by the fact that the study was held in Alwiyia center which is the main drainage clinic for Al-sadrcity, other factors like high population density which is half of the AL-Russafa district and changing of life style. The most cited reason for global increase in breast cancer is "westernization" of developing world [27].

Marital status alone was not considered as a risk factor but it is related to other risk factors like early menarche, age at full term pregnancy and parity [29].

In this study 81% of patients presented with mass as a first presentation and 96% with invasive type, either local invasion, metastasis to lymph node or other organs, low percentages of in-situ disease less than 5%and high rate of mastectomy which was 60-80% which might be explained by limited medical data in patient's files [27,29].

In conclusion, risk factors of breast cancer in Baghdad is a perplexing issue and needs a privy analysis as the disease has a para amount importance with increasing incidence in last decade. Knowing the risk factors for breast cancer may help us take preventative measures to reduce the likelihood of developing the disease and develop better treatment.

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