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ORIGINAL ARTICLE

Risk Factors of Breast Cancer among Premenopausal Women in Al-Mosul City of Iraq

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ABSTRACT

Background: Breast cancer is a multifactorial disease where genetic suitability, environmental, nutrition, and other lifestyle risk factors interact. A better identification of modifiable risk factors and risk reduction of breast cancer may allow implementation of valuable strategies for prevention.

Objective: This is to determine the risk factor of breast cancer among women in Mosul city and its significance of it on breast cancer development.

Method: A Case-control study was conducted at Al-khansaa hospital Breast cancer Screening center, Hazem AL-Hafeth hospital. The total sample was 120 and was divided into 80 women without breast cancer as control and 40 women with breast cancer as case, and all cases should have positive histopathology based on fine-needle aspiration cytology and positive histopathology examination of excisional biopsy the control should not have any history of a breast problem.

Result: The result revealed that women with breast cancer have high age (18.5%) compared with control and that majority of cases were not highly educated, which is also a risk factor for breast cancer and that breast ca. increase in women with early menarche, smoking, having a first-degree relative with breast ca. or with colon cancer, eating fatty diet, previous lump resection strongly associated with breast cancer while address, breast lactation, occupation is, using an oral contraceptive, number of children or abortion is not a protective factor, and that hormonal replacement therapy is not a risk.

Conclusion: It can be concluded from this study that age, early menarche, smoking fatty diet, previous lump resection, first-degree relative with breast or colon cancer is a significant risk factor for breast cancer.

INTRODUCTION

Breast cancer is one of the common malignancies among females globally, referring to 25% of most types of cancer, which includes an approximated 1.57 good results of survival with this illness, is documented in a high-resource nation,

the danger goes on to enlarge, producing an elevated fatality rate in the middle in addition to low-income nations.^{1,2} Inside the eastern mediterranean region (EMR), cancer could be the fourth scored reason for death, following heart diseases, communicable diseases, and accidents.³

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The Global Agency for Research on Cancer (IARC) calculated that 292,677 cases of the tumor had been recently recognized around a woman in EMR in 2012 and 176,139 who died of illness.¹ The actual five usually documented types of cancer in females are breast, colorectal, cervix, ovary, and non-Hodgkin lymphoma. In general, 99,000 cases were documented as breast tumors in that area. additional characteristics that validate rising work for breast tumor management in the EMR take in the dramatic increase in the occurrence plus the elevated frequency of exaggerated young females representing at complex levels of illness^{1,3,4}

Breasts Cancer of the is the main danger to women's wellbeing in Iraq, wherever it's the leading reason for dying following heart diseases among females, having a malignancy-related fatality rate of 23%.^{1,4-6}

Danger feature of breast tumor: Females' gender is the main dangerous reason for breast malignancy as well as age is a danger factor of breast malignancy were increase by growing up. Genetic the general reason for hereditary breast malignancy inherited change in BRCA1, BRCA2 usually this gene inhibits malignancy by creating a protein that remains cell from developing unusually. Family history: getting a first-level relative (mother, daughter, sister) with breast malignancy increases a female risk of having breast malignancy raised threefold.⁷

Learning level of several conceptions in addition to Menstrual period: females who have menarche before 12 years and menopause after 55 years have raised danger of breast malignancy, work, the female who have 1st kid after the age of 30 years is a danger element. Females on oral birth control pills related with a rising danger of developing breast malignancy.⁸

Pregnancy and Nursing inhibit the hazard of cancer of the breast, particularly when constantly breastfeeding for 1 to 2 years.⁹

Obesity, particularly following menopause, raises the danger for growth and development of breast malignancy before menopause small effect due to the fact that the ovary secret much estrogen.⁶

At the same time as exercise reducer risk,⁴ hormonal substitute treatment leads to an increased chance of breast cancer in present users of hormone replacement therapy (HRT). Smoking is really a strong risk that was resulting in getting breast Cancer.¹

Aim: To determine the risk factor of breast cancer among women in Mosul city and its significance on breast cancer development.

MATERIAL AND METHODS

A case-control study was conducted at Al-khansaa hospital Breast cancer Screening center, Hazem AL-Hafeth hospital. The total sample was 120, divided into 80 women without breast cancer as control and 40 women with breast cancer as a case. All cases should have positive histopathology on the basis of fine-needle aspiration cytology and positive histopathology examination excisional biopsy. The control should not have any history of a breast problem. In the data analysis by (SPSS 22), we calculate the odds ratio of each risk factor.

RESULTS

Table 1 shows the frequency of variables as age showed more women in our study at ages 40–49 years and abortion less than three while more female-only with school level of education, more female in our study were married with 1–3 children, in our study most females got pregnancy at ages 18–23 years, only nine females got smooching. Only seven females with a

Table 1: Frequency of variable.

Variable	Case	Control
<i>Age (years)</i>	%	%
20–29	5 13	40 36
30–39	7 18	23 29
40–49	25 61	17 34
50–55	3 8	0 0
<i>Abortion</i>		
>3	1 3	2 2
<3	14 35	14 12
0	25 62	64 86
<i>Age of menarche</i>		
11–13 y	28 70	46 58
14–16 y	12 30	33 40
17 y	0 0	1 2
<i>Maternal status</i>		
Married	36 90	35 44
Single	4 10	45 56
<i>No. of children</i>		
Nulliparous	4 10	51 64
1–3	15 38	20 24
4–6	15 37	9 12
7–10	6 15	0 0
<i>1st pregnancy</i>	%	%
18–23	15 38	8 10
24–28	14 35	15 19
29–34	7 17	4 5
35–40	0 0	2 3
Not married	4 10	51 63
<i>Smoking</i>		
Smoker	12 30	2 2
Non-smoker	28 70	78 92
<i>Previous lump</i>		
Yes	7 25	3 9
No	33 75	77 91
<i>Residence</i>		
Urban	25 63	76 89
Rural	15 37	4 11
<i>Occupation</i>		
Housewife	34 85	32 40
Employer	6 15	5 6
Student	0 0	43 54

Variable	Case	Control
<i>Breast feeding</i>	%	%
Never	6 15	56 66
< one year	13 33	6 7
One year only	7 6	4 5
1 to 2 year	9 23	13 15
>2 years	5 13	1 1
<i>Oral c.p.</i>		
Always	9 23	7 9
Never	31 78	73 91
<i>HRT</i>		
Never	39 97	78 92
Always	1 3	2 8
<i>1st Relative B. Ca.</i>		
Yes	7 18	2 2
No	33 82	78 98
<i>1st Relative Ca.</i>		
Yes	4 10	2 3
No	36 90	78 97
<i>Fatty Diet</i>		
Yes	37 93	33 41
No	3 7	47 59

previous lump were from the urban region. In contrast, most women were housewives. More females had less than one-year of breastfeeding; few females used oral contraceptive pills (OCP) and HRT. A small number of females had 1st-degree breast ca. and other cancer like colon and prostate, more females with a fatty diet than other types of diet.

In **Table 2**, women who aged between 40 to 49 years have (OR = 11.7) times risk to develop breast cancer than women with age (30-39) years, chronic smokers have (OR = 16.7) time risky to develop breast cancer than non-smoker women, In our study women with early menarche 11–13 year have (OR = 1.6) time risky to develop breast cancer than women whom their menarche Delayed for 14–16 year, lactating are also protected against breast cancer than those who are never lactating (OR = 0.06), in history of previous lump resection are (OR = 8.5) time risky to developing breast cancer than whom not have any history of lump resection, women with less than <3 Abortions are (OR = 2.5) times the risk of developing breast cancer than those who do not have a history of abortions; women on OCP are (OR = 3) riskier to develop breast cancer than those not on OCP. Similar to hormonal replacement therapy, is OR=1 not a risk factor. In our study 1st degree relatives with breast cancer have (OR = 8.2) time risky to developing breast cancer, and 1st degree relative with prostate or colon cancer are (OR = 4.3) time risky to developing breast Cancer. Also, indicate that women living in urban areas are more protected than women living in rural areas. My study showed that housewives are more protected from developing breast cancer than employers. Also, women on fatty diet have (OR=17.5) time risk of developing breast cancer than women who are not on a fatty diet, while nulliparous women are more

Table 2: Relation between variables and developing breast Cancer.

Variables	Odd ratio
Age (years)	
20–29	
30–39	1.4
40–49	11.7
50–55	
Smocking	
Smoker	16.7
Non-smoker Non-smoker	
Age of menarche	
11–13	
14–16	1.6
17	
Breastfeeding	
Never	
<1 year	0.06
1 year	
1 to 2 year	0.02
>2 years	
Previous lump resection	
Yes	8.5
no	
Abortion	
>3	
<3	2.56
0	
Oral contraceptive pills	
Always	3
Never	
HRT	
Always	1
Never	
1st relative breast Ca	
Yes	8.2
No	
1st relative colon or prostate Ca	
Yes	4.3
No	
Residence	
Urban	0.08
Rural	
Occupation	
Housewife	
Employer	0.8
Student	
Fatty diet	
Yes	17.5
No	
Age at 1 st pregnancy	
18–23	
24–28	1.8
29–34	
35–40	
Not married	
Number of children	
1–3	0.1
4–6	0.4
7-10	

Odds ratio > 1 more risky, <1 less risky (protective).

protective than multiparous women. the women who have 1 to 3 children are more protective than women with four children

and more. Also, we found that women who have 1st pregnancy at age (29–34) have (OR = 1.8) time risky to developing breast cancer than women whom there 1st pregnancy at the age of 24 to 28.

DISCUSSION

The result reveals that women age between (40 to 49) years have (OR = 11.7) times risk of developing breast cancer than women with age 30 to 39 years which agrees with a study done in British and Switzerland.^{10,11} Also, our results show that women with less than <3 Abortions are (OR = 2.5) time risk to develop breast cancer than those whom do not have a history of abortions which " incompatible with " "This review explains the supposed difference in effects of induced and spontaneous abortion upon the breast tissue and examines the literature for a link with breast cancer. Additional subcategories examined include parity, number of abortions, gestation, and maternal age at abortion. A comparison of retrospective and prospective studies is made, and possible sources of bias are identified. There is no evidence to support a link between spontaneous abortion and breast cancer. Absence of a link with induced abortion is less clear",¹² also from our results showed that women with early menarche (11–13) year have (OR = 1.6) time risky to develop breast cancer than women whose menarche Delayed for 14 to 16 year this results similar to meta-analysis study done by a collaborative group,¹³ and also our results meet the results from a study done by Apter.¹⁴ Also, we found that women who are chronic smokers have (OR = 16.7) time risky to develop breast cancer than non-smoker women that agrees with "results from the nine cohort studies reporting exposure metrics more detailed than ever/never and ex/current smoker show that early age of smoking commencement, higher pack-years and longer duration of smoking increase breast cancer risk 15 to 40%. Three meta-analyses report 35 to 50% increases in breast cancer risk for long-term smokers. The active smoking evidence bolsters support for three meta-analyses that each reported about a 65% increase in premenopausal breast cancer risk among never smokers exposed,¹⁵ in women who are on lactating are protected against breast cancer than those who are never lactating.¹⁶ Then also we found that women on fatty diet have (OR = 17.5) time risky to developing breast cancer than women who are not on a fatty diet but this fact still unclear similar to study done in India¹⁷ and the same opinion in another study state that unclear relation between breast cancer and fatty diet.¹⁸ Our study found that women with previous lumps have 8.5 times more to get breast cancer than women who don't have previous lumps, similar to the study done in China.¹⁹ Also, in our study, we found that females who used OCP had 3 times to get tumors than females not used similar to study done by Elisabeth F. Beab²⁰ but in women who used HRT had no effect to developed breast cancer this disagrees with Howell, Anthony that said there was an association between breast cancer and hormonal replacement therapy.²¹ Also, females with a first relative family history of breast tumor, colon cancer and prostatic cancer had eight and four

times to developed breast cancer respectively agree with a study done in USA.²² Females who lived in urban had more protected from breast cancer than females who lived in rural area agreed by Sara's study.²³ Also, housewife females are more protected than employed, and student women from breast cancer similar to study done in china had the same results.²⁴ In our study, we found that 1st pregnancy at age (29 to 34) has (OR = 1.8) time risk of developing breast cancer than women who have 1st pregnancy at the age of 24 to 28. This is agreed with a study done in japan.²⁵ women are more protective multiparous women . the women who have 1 to 3 children are more protective than women with four children and more. Also, this was agreed with a study done in morocco.²⁶

CONCLUSION

It can be concluded from this study that age, early menarche, smoking fatty diet, previous lump resection, first-degree relative with breast or colon cancer is important risk factor for breast cancer. There must be more research for these risk factors.

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