

# Relationship between Breastfeeding and Risk of Breast Cancer in Saudi Women

## Abstract

**Background:** Breast cancer remains life threatening malignant disease worldwide. According to the American Cancer Society, about 1.3 million American women were diagnosed annually with breast cancer and about 465,000 died from the disease. In Saudi Arabia the incidence of breast cancer is around 35.8% in women and 9.4% in men.

**Method:** A cross-sectional hospital-based study was carried out at King Khalid University Hospital in Riyadh from 2014- 2015 to assess the risk of breast cancer in relation to breastfeeding pattern. A total of 91 cases were included in the study. Apart from the patient's demographics, detailed information regarding pattern of breastfeeding, menstruation, reproductive factors and confounders were collected. Adjusted odds ratios and 95% confidence intervals were calculated.

**Results:** Total 91 patient, age 48.3±10.5yrs, median age was 49yrs. The 65.5% women breastfed their babies while 31(34.1%) never breastfed at all. Those 65.5% women breastfed their children for the duration of 6±1.73 months. Prevalence of breast cancer was more in premenopausal than postmenopausal ladies 61.5% vs 38.5%. Family history of breast cancer was present in 44% patients. 30.8% patients were on the hormone replacement therapy. 89% of patients were aware of the benefits of breast-feeding. 79.12% women were above the age of 40 yrs. 61.1% ladies were on oral contraceptives. Cross tabulation and Chi-square tests revealed that advanced age, use of oral contraceptives, premenopausal status, family history of breast cancer, hormone replacement therapy were the factors associated with the incidence of breast cancer irrespective of the fact that majority (65.5%) breastfed all their children upto 6±1.73 months. The present study shows that breastfeeding upto 6 ± 1.73 months does not have protective effect against breast cancer. Further prospective studies with larger study population and still longer duration of breastfeeding are desired so as to see if there is a protective effect of breastfeeding against breast cancer risk in Saudi Women.

**Conclusion:** Breast feeding upto 6±1.73 months does not protect against development of breast cancer in Saudi women.

**Keywords:** Breast cancer, Exclusive breastfeeding

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## Introduction

Breast cancer remains life threatening malignant disease worldwide. According to the American Cancer Society, about 1.3 million American women annually are diagnosed with breast cancer and about 465 000 die from the disease.<sup>1</sup> Breast cancer is the commonest malignancy in women and comprises 18% of all female cancers.<sup>2</sup> Breast cancer incidence rates are increasing worldwide.<sup>3</sup>

In Saudi Arabia, incidence of breast cancer is (35.8%) in females and (9.4%) in men and the incidence is increasing.<sup>4-6</sup> The evidence of an association of lactation with a reduction in the risk of breast cancer among women has been limited and inconsistent. Many recent studies have shown that breastfeeding reduces the risk of breast cancer.<sup>7-10</sup> It is important to know that What is the exact pattern of breastfeeding, which shows protective effect, weather it is life time overall duration of breastfeeding, or the total number of children which are breastfed, or the age at which breastfeeding started like from young age or at late age, or it is simply whether breastfed the babies or not. Previous studies have shown that the relative risk ranges from 0.4-0.9.<sup>11</sup>

In Saudi Arabia the incidence of breast cancer is high. Identification of factors protecting from breast cancer will have

tremendous community impact. The aim of the present study was to investigate whether breastfeeding is related to subsequent reduction in the risk of breast cancer in Saudi ladies or not. The present study will comprehensively evaluate the pattern of breast-feeding and its association with the breast cancer in Saudi females.

## Methods

It was a case-control study conducted at King Khalid University Hospital Riyadh Saudi Arabia between January 2014 and January 2015. Study populations were breast cancer patients visiting Obstetric & Gynecology department. Controls were matched hospital patients without breast cancer. Cases were enrolled through consecutive convenience sampling, and after obtaining informed consent, patients were given a questionnaire and asked about their basic demographic factors. Menstrual and reproductive history was taken, including age at menarche, menopausal status, age at menopause, number of children born alive, age at first live birth and breastfeeding practice. Including weather breast-fed the children or not breast-fed the children. Number of children breastfed, total duration of breastfeeding per child, overall total period of breastfeeding accounting all the children. Age at first breast-feeding. Menopause was defined as absence of menstruation for at least six months before the diagnosis of breast cancer.

## Statistics

Chi-square test and Logistic regression analysis odds ratio and 95% confidence interval were calculated for every factor of pattern of breastfeeding like breastfed yes or no total time breastfed less than 6 months or more than six months. The p-value was calculated. All analysis was performed with SPSS version 20. Chicago Illinois USA.

## Results

Table 1 shows the base line characteristics and demographics of study population. A total of 91 cases participated. With mean age  $48.34 \pm 10.5$  yrs. median 49 yrs. Majority of the patients were in 41-50 yrs. age group 37(40.7%). Followed by 27(29.7%) patients with 51-60 yrs. age group. 19 (20.9%) patients were below the age of 40 yrs. While 72(79.2%) were above the age of 40 yrs. Among the breast cancer patients 56(61.5%) were pre-menopausal and 35(38.5%) were post-menopausal. Family history of breast cancer was present in 40(44%) patients. 55(60.4%) patients were on contraceptives while 28(30.5) patients were on hormone replacement therapy. Only 2(2.2%) patients were smoking.

**Table 1** Baseline Characteristics of Study Population. N=356

Variables	Values
Mean Age(yrs)	48.34+10.5
Age group (yrs):	
<30	6(6.6%)
31-40	13(14.45%)
41-50	37(40.7%)
51-60	27(29.7%)
>60	8(8.8%)
Nationality (Saudi)	100%
Breast cancer: Pre-Menopausal	56(61.5%)
Post -Menopausal	35(38.5%)
Hormone Replacement use	28(30.8%)
Family History of BC	40(44%)
Use of Contraceptives	55(60.4%)

Table 2 shows the factors associated with breast cancer. Majority of the patients were aged, mostly premenopausal, multiparous and on oral contraceptives. Advanced age, premenopausal period, use of oral contraceptives, multiparity and family history of breast cancer were the factors associated with breast cancer patients.

**Table 2** Showing the factors associated with breast cancer

Variables	NO %
AGE>40 yrs.	79.20%
AGE <40 yrs	20.90%
Premenopausal	56(61.5%)
Postmenopausal	35(38.5%)
	37(40.7%)
Use of Contraceptives	55(61.1%)
Multiparity	82 (90.19%)
Hormone Replacement use	28(30.8%)
Family History of BC	40(44%)

Table 3 shows the duration of breastfeeding among Saudi ladies. The mean duration of breastfeeding was  $6.03 \pm 1.73$  months. Median was 6 months, mode was 6 months, range was 8 months minimum 3 months and maximum was 11 months. Duration of feeding was <5 months in 23(39%) of ladies. From 5-6 months in 24(40.7%) of the ladies, 6-7 months in 4(6.8%) of ladies while duration of breastfeeding was > 7 months in 8(13.6%) ladies.

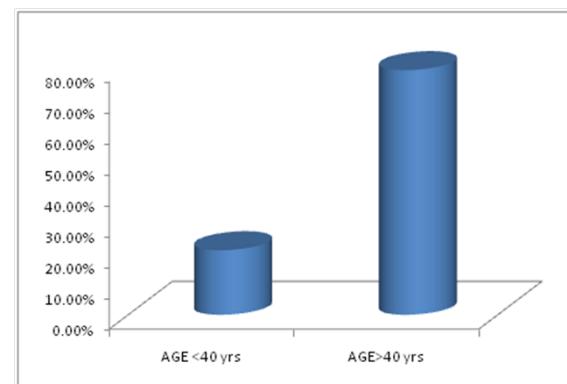
**Table 3** Duration of breastfeeding among Saudi ladies

	Frequency	Percent	Cumulative Percent
Valid	<5	23	39.0
	5-6	24	40.7
	6-7	4	6.8
	>7	8	13.6
Total	59	100.0	

Table 4 shows the pattern of breastfeeding among study population. Total 81(89%) patients were aware of the benefits of breastfeeding. Total 59(64.8%) had breastfeeding, while 32 (35.1%) did not breastfeed their child. Total duration of breastfeeding was  $6 \pm 1.2$  months. Cross tabulation and Chi-square test has revealed that advanced age, use of oral contraceptives, premenopausal status, family history of breast cancer, hormone replacement therapy were the factors associated with the incidence of breast cancer irrespective of the fact that majority 65.5% breastfed all their children upto  $6 \pm 1.73$  months. Present study reveals that breast feeding upto  $6 \pm 1.73$  months does not have protective effect against breast cancer. Further prospective studies with larger study population and still longer duration of breastfeeding are desired so as to see the protective effect of breastfeeding against breast cancer risk in Saudi Women.

**Table 4** Pattern of breastfeeding among Saudi ladies

Variables	Values %
Breastfed	59(64.8%)
Aware of Benefit of Breastfeeding	81(89%)
Breastfed All Children:	
<30 yrs	4(6.8%)
31-40	9(15.3%)
41-50	24(40.7%)
51-60	16(27.1%)
>60	6(10.2%)
Premenopausal	40(67.8%)
Postmenopausal	19(32.2%)



**Figure 1** Age and breast cancer.

## Discussion

Overall, in this study, lactation was not associated with the reduced risk of breast cancer among premenopausal women. However, the incidence of breast cancer was reduced in postmenopausal women as compared to the premenopausal women. Our findings are in agreement of some previous studies.<sup>12</sup> Our findings appear to conflict with the results of two recent cohort studies<sup>13,14</sup> although both the cohorts in

both these studies were large, the number of premenopausal women with breast cancer who had a history of long-term lactation was small. Lactation may reduce the risk of breast cancer simply by interrupting ovulation or by modifying pituitary and ovarian hormone secretion.

The present study shows that breast cancer was more in premenopausal women. Our findings are in agreement of previous study.<sup>15,16</sup> Present study reveals that breastfeeding was not protective against breast cancer for premenopausal women. However, majority of Western studies have shown that breast feeding is protective against breast cancer.<sup>17-22</sup> However similar to the present study, some studies found protective effect only for postmenopausal women. A collaborative re-analysis of 47 studies showed that breastfeeding was protective for both premenopausal and postmenopausal women.<sup>23,24</sup>

In the present study, risk of breast cancer was more in patients on hormone replacement therapy and on oral contraceptives. These findings are similar to some previous studies.<sup>25,26</sup> Further analytical epidemiological research is needed to identify the potential risk factors involved in the increase in the prevalence of breast cancer among Saudi women. Our study had some limitations because of its small sample size. It is a retrospective study. We found few local studies similar to our study that assessed role of reproductive factors in causing breast cancer. In 1991, Al Dirissi et al.<sup>22</sup> found no protective effect of breastfeeding against breast cancer risk.<sup>22</sup>

## Conclusion

This study will be a useful addition to current understanding of epidemiology of breast cancer in KSA. Studies done on a wider scale with much more detailed history of breast feeding including whether to breastfed the children or not, number of children breastfed, total duration of breastfeeding per child, overall total period of breastfeeding accounting for all the children. Age at first breastfeeding is needed to establish the role of breastfeeding and other factors for pre-menopausal and post-menopausal breast cancer in the country of Saudi Arabia.

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## Conflicts of interest

None.

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