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Original Article

Association with reproductive risk factors: A case-control study

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ABSTRACT

Background: *Association of reproductive factors with breast cancer is unclear in our population. This study was done to assess the relationship between various reproductive risk factors of breast cancer in Bangladesh.* ***Methodology:*** *This case control study was conducted in Department of Surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet and Shaheed Shamsuddin Hospital, Sylhet during January 2012 to June 2012. Sixty five women with breast cancer fulfilling the inclusion and exclusion criteria were taken in case group and age-stratified random sample of 65 women without breast cancer were taken in control group.* ***Results:*** *The mean age of the patients was 48.9 (SD ±8.7) years in case group and 47.8 (SD ±8.7) years in control group (p>0.05). A significant reduction of the risk of developing breast cancer was observed among women whose age at menarche was 13-15 years compared with women whose age at menarche was 12 years or less (OR=0.296; 95% of CI=0.090-0.969; p=0.044). A significant reduction of the risk of developing breast cancer was observed among women whose age at marriage was 18 years or less compared with women whose age at marriage more than 18 years (OR=0.413; 95% of CI=0.184-0.927; p=0.032). A significant increase of the risk of developing breast cancer was observed among women whose age at 1 child was 21 to 25 years compared with women whose age at 1 child was at 20 years or less (OR=2.61; 95% of CI=1.18-5.78; p=0.018). Postmenopausal women had about 30% higher risk of breast cancer compared with premenopausal women (non-significant) (OR=1.31; 95% of CI=0.64-2.69; p=0.464). Women with family history of breast cancer were at elevated risk (non-significant) of breast cancer compared women without family history of breast cancer (OR=2.63; 95% of CI=0.49-14.05; p=0.259). A significant reduction of the risk of developing breast cancer was observed among women whose total duration of breast feeding was 2 years or more compared with women had absent breast feeding (OR=0.25; 95% of CI=0.08-0.83; p=0.024). A significant increased the risk of developing breast cancer was observed among women whose used hormonal contraceptives compared with women without using hormonal contraceptives (OR=2.11; 95% of CI=1.04-4.31; p= p=0.040).* ***Conclusion:*** *Advanced stage of presentation has remained a dilemma for the treating oncologists and surgeons in our country. Many NGOs, hospitals and clinics have been running programs to increase*

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awareness about breast cancer.

Keywords: Risk factor, Breast cancer, Reproductive health

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BACKGROUND

Breast cancer is most frequently diagnosed cancer in females. According to a World Health Organization [WHO] estimate, more than 1.2 million people are diagnosed with breast cancer worldwide every year. More than half of the cases are in industrialized countries - about 361,000 in Europe (27.3% of cancers in women) and 230,000 in North America (31.3%). Incidence rates are high in most of the developed areas (except for Japan, where it is third after colorectal and stomach cancers), with the highest age-standardized incidence in North America (99.4 per 100,000).[1] The incidence is more modest in Eastern Europe, South America, Southern Africa, and Western Asia, but it is still the most common cancer of women in these geographic regions. The rates are low (<30 per 100,000) in most of Africa (with the exception of South Africa) and in most of Asia. The lowest incidence is in Central Africa (ASR, 16.5 per 100,000).[2] In our subcontinent, breast cancer is the most frequent female cancer in Pakistan, accounting for almost 26.6%.[3] In Bangladesh, breast lesions particularly breast cancer are one of the common clinical problem. There is no exact data about the incidence of breast cancer in our country. In a study shows, it is the second most common cause, responsible 16.74% cancer death among the Bangladeshi female.[4] Breast cancer presentation features do not alter much in the elderly. The most frequent sign of breast cancer is a painless lump. A new lump in an older woman is more likely to be cancerous. Breast pain, thickening, swelling, or nipple symptoms such as discharge or retraction should be vigorously pursued in older women. [5] Most breast cancer risk factors relate to gynecological or endocrinological events in a woman's life.[6,7] Early menarche and late menopause lead to an increased total lifetime number of menstrual cycles and a corresponding 30% to 50% increase in breast cancer risk. Conversely, late menarche and early menopause lead to a reduction in breast cancer risk of similar magnitude.[8] Pregnancy at a young age, especially before the age of 20, markedly reduces the incidence of subsequent breast cancer. Conversely, both nulliparity and age older than 30 at first live birth is associated with nearly a doubling of the risk of subsequent breast cancer. Pregnancies not ending in the birth of a viable fetus do not confer reduction in the risk of breast cancer. Lack of breast-feeding is significantly associated with breast cancer. [9] While there is no certain means of preventing breast cancer, all women may limit their risk factors for breast cancer, and women at high risk for the disease may be candidates for medical or surgical preventive measures.[8] Moreover early detection and screening, especially when combined with adequate therapy, offer the most immediate hope for a reduction in breast cancer mortality as proposed by the World Health Organization.[10,11] Because of the new options accessible to healthy women, reviewing available information on breast cancer prevention is vital now.8 In this study, we wish to examine the reproductive risk factors in its development from our perspective.

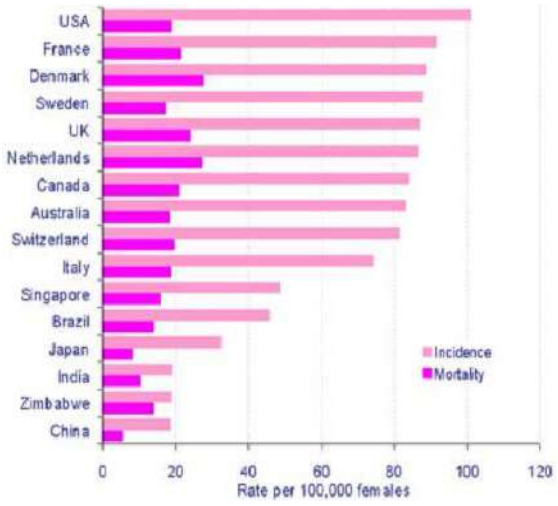

Figure 1: Geographic variation of Breast cancer.

Breast cancer incidence varies considerably, highest rate in developed world and lowest rate in developing world. Around 361000 new cases of breast cancer occur in Europe and 210,000 in USA each year. [12]

MATERIALS AND METHODS

This was a case-control study conducted in the department of Surgery, Sylhet M.A.G. Osmani Medical College Hospital, Sylhet and Shaheed Shamsuddin Hospital, Sylhet from January 2012 to June 2012. All female patients with primary carcinoma of breast irrespective of their age and who underwent breast surgery were included in the study. Carcinoma of male breast, patient with secondary breast carcinoma & patients those were not interested to participate in the study were excluded. In this study we took 65 women with breast cancer fulfilling the inclusion and exclusion criteria was taken in case group and age-stratified 65 women without breast cancer were taken in control group. Consecutive, convenient and exhaustive sampling was applied in selecting case group and age-stratified random sampling in selecting control group. Pre-designed data collection sheet designed for the study.

Procedure of data collection: Control subjects were selected from attendant accompanying the patients or other admitted patients without breast cancer in such a way that they were same age group. After maintaining privacy and in presence of female attendant details history was taken from all patient especially reproductive factor such as age at menarche, age at 1st pregnancy, parity, breast feeding and age at menopause. Examinations of the patients included general examinations with regard to built, anaemia, jaundice, lymphadenopathy, evidence of any acute infection. Local examination was done with thorough examination of the breast lump including the site, size, consistency, mobility of the breast lump, fixation with underlying structure and overlying skin and any ulceration of overlying skin, nipple retraction, peau d' orange; and also the axilla and contralateral breast. Systemic examination including respiratory, cardiovascular and central nervous system were also done.

Investigations were carried out for blood for TC, DC, ESR, Hb level, blood sugar, blood grouping, serum creatinine and relevant liver function test, X-Ray Chest P/A view, USG of abdomen, FNAC of the breast lump. Other relevant investigations for anaesthesia and operative fitness were also done. Per-operative findings were noted in selected cases where operative procedure was performed.

The specimen was preserved in 10% formalin and was sent to pathology laboratory for histopathology and histopathological grading. Histopathological grading was done by Bloom Richardson grading system as

grade 1, 2 and 3. Axillary sampling or clearance was carried out in all selected cases according to stage of carcinoma. All these lymph nodes were also preserved in 10% formalin and was sent to pathology laboratory for histopathology to assess the presence of metastasis. All the findings were recorded in the predesigned questionnaire.

Statistical Analysis: After collecting data editing was done manually and analyzed with the help of computer software program such as SPSS version 16.0 (Statistical package for social science). Quantitative data was analyzed by mean and standard deviation.

Ethical consideration: All the participants in the study were informed about the purpose of the study and written consent was taken before participation. All information was collected confidentially with complete respect to the patient wish and without any force or pressure. The protocol was approved by the Ethical Committee of Sylhet MAG Osmani Medical College, Sylhet.

RESULTS

Table 1 showed the distribution of the respondents by age. The age of the patients ranged from 31 to 69 years with the mean age of 48.9 (SD 8.7) years in group-A; whereas the age of the patients ranged from 31 to 68 years with the mean age of 47.8 (SD 8.7) years in group-B. The mean age of the patients in both groups was almost identical (Z=0.735; p>0.05). In group–A 26 (40.0%) patients were in the age group of 41 to 50 years, 22 (33.8%) patients were in the age group of 51 to 60 years, 9 (13.8%) patients were in the age group of 61 to 70 years and 8 (12.3%) patients were in the age group of 31 to 40 years; while in group-B it was 9 (13.8%), 27 (41.5%), 20 (30.8%) and 8 (12.3%) respectively. There was no statistically significant difference between the age group of the patients in group-A and group-B (p>0.05). Distribution of respondents according to their educational status was shown. In group-A, educational status was illiterate in 31 (47.7%), education below 10 years in 25 (38.5%) and 10 years or more in 9 (13.8%) cases. While in group-B educational status was illiterate in 35 (53.8%), education below 10 years in 23 (35.4%) and 10 years or more in 7 (10.8%) respondents. The difference between the two groups in relation to educational status was not statistically significant (χ^2=0.576; p>0.05). The socioeconomic status of the patients was grouped into lower class, middle class and higher class. Socio-economic status was lower class in 39 (60.0%), middle class in 20 (30.8%) and upper class in 6 (9.2%) patients; while it was 34 (52.3%), 26 (40.0%) and 5 (7.7%) respectively in control group. The difference between the two groups in relation to socio-economic status was not statistically significant (p>0.05). Distribution of respondents according to their residential status was revealed. In group-A, 45 (69.2%) patients were from rural area and 20 (30.8%) were from urban area. Whereas in group-B, 44 (67.7%) respondents were rural and 21 (32.3%) were urban by social background. The difference between the two groups in relation to social background was not statistically significant (p>0.05).

Table 2 showed the distribution of respondents according to age at

menarche. A significant reduction of the risk of developing breast cancer was observed among women whose age at menarche was 13-15 years compared with women whose age at menarche was 12 years or less (OR=0.296; 95% of CI=0.090-0.969; p=0.044). Among women age at menarche was more than 15 years, the risk was reduced materially (OR=0.092; 95% of CI=0.017-.0510; p=0.006).

Distribution of respondents according to age at marriage was shown in table 3. A significant reduction of the risk of developing breast cancer was observed among women whose age at marriage was 18 years or less compared with women whose age at marriage more than 18 years (OR=0.413; 95% of CI=0.184-0.927; p=0.032).

Table 4 showed the distribution of respondents according to age at 1st child. A significant increase of the risk of developing breast cancer was observed among women whose age at 1 child was 21 to 25 years compared with women whose age at 1 child was at 20 years or less (OR=2.61; 95% of CI=1.18-5.78; p=0.018). Among women age at 1 child was more than 25 years, the risk was increased materially (OR=6.5; 95% of CI=1.56-27.92; p=0.010).

Distribution of respondents according to status of menopause was shown in table 5. Postmenopausal women had about 30% higher risk of breast cancer compared with premenopausal women (non-significant) (OR=1.31; 95% of CI=0.64-2.69; p=0.464).

Distribution of respondents according to age at menopause was shown in table 6. Women who attained menopause at 50 years of age and above were at slightly elevated risk (non-significant) of breast cancer compared with women who attained menopause at less than 50 years of age (OR=1.13; 95% of CI=0.40-3.20; p=0.820).

Distribution of respondents according to family history of breast cancer was shown in table 7. Women with family history of breast cancer were at elevated risk (non-significant) of breast cancer compared women without family history of breast cancer (OR=2.63; 95% of CI=0.49-14.05; p=0.259).

Table 8 reported the distribution of respondents according to total duration of breast feeding. A significant reduction of the risk of developing breast cancer was observed among women whose total duration of breast feeding was 2 years or more compared with women had absent breast feeding (OR=0.25; 95% of CI=0.08-0.83; p=0.024). However, among women total duration of breast feeding was less than 2 years, the risk was also reduced (non-significant) compared with women had absent breast feeding (OR=0.83; 95% of CI=0.16-4.21; p=0.825).

Distribution of respondents according to use of hormonal contraceptives was shown in table 9. A significant increased the risk of developing breast cancer was observed among women whose used hormonal contraceptives compared with women without using hormonal contraceptives (OR=2.11; 95% of CI=1.04-4.31; p= p=0.040).

Table 1: Socio-demographic criteria of the respondents

Socio-demographic criteria of the respondents	Group-A (n=65) n(%)	Group-B (n=65) n(%)	p value
Age distribution			
31-40 years	8 (12.3%)	9 (13.8%)	
41-50 years	26 (40.0%)	27 (41.5%)	
51-60 years	22 (33.8%)	20 (30.8%)	
61-70 years	9 (13.8%)	8 (12.3%)	
Mean (SD) years	48.9 (SD 8.7)	47.8 (SD 8.7)	p>0.05
Level of education			
Illiterate	31 (47.7%)	35 (53.8%)	
<10 years	25 (38.5%)	23 (35.4%)	
≥ 10 years	9 (13.8%)	7 (10.8%)	
Total	65 (100%)	65 (100%)	p>0.05
Socio-economic status			
Lower class	39 (60%)	34 (52.3%)	
Middle class	20 (30.8%)	26 (40%)	
Higher class	6 (9.2%)	5 (7.7%)	
Total	65 (100%)	65 (100%)	p>0.05
Residential status			
Rural	45 (69.2%)	44 (67.7%)	
Urban	20 (30.8%)	21 (32.3%)	
Total	65 (100%)	65 (100%)	p>0.05

Table 2: Distribution of respondents according to age at menarche

Age at menarche	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	p value
≤ 12 years	13 (20%)	4 (5.2%)	1	-	-
13-15 years	49 (75.4%)	51 (78.8%)	0.296	0.090-0.969	p=0.044
>15 years	9 (16.1%)	10 (15.8%)	0.092	0.017-.0510	p=0.006
Total	65 (100%)	65 (100%)			

OR: Odd ratio, CI: Confidence interval
Figure in the parenthesis indicates corresponding percentage.
* Regression analysis was applied to test the level of significance

Table 3: Distribution of respondents according to age at marriage

Age at marriage	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	p value
≤ 18 years	12 (18.5%)	23 (35.4%)	1	-	-
>18 years	53 (81.5%)	42 (64.6%)	0.413	0.184-0.927	p=0.032
Total	65 (100%)	65 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance					

Table 4: Distribution of respondents according to age at 1st child

Age at 1st Child	Case (n=56) n(%)	Control (n=63) n(%)	Odds Ratio	95% of CI	p value
≤ 20 years	15 (26.8%)	33 (52.4%)	1	-	-
21-25 years	32 (57.1%)	27 (42.9%)	2.61	1.18-5.78	p=0.018
>25 years	9 (16.1%)	3 (4.8%)	6.50	1.56-27.92	p=0.010
†Total	56 (100%)	63 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance. †Nine patients in group-A and 2 patients in group-B were nulliparous.					

Table 5: Distribution of respondents according to status of menopause

Status of menopause	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	p value
Pre-menopause	25 (38.5%)	21 (32.3%)	1	-	-
Post menopause	40 (86.2%)	44 (67.7%)	1.31	0.64-2.69	p=0.464
Total	65 (100)	65 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance.					

Table 6: Distribution of respondents according to age at menopause

Age at menopause	Case (n=40) n(%)	Control (n=44) n(%)	Odds Ratio	95% of CI	p value
≥ 50 years	9 (22.5%)	9 (20.5%)	1	-	-
<50 years	31 (77.5%)	35 (79.5%)	1.13	0.40-3.20	p=0.820
Total	40 (100%)	44 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance.					

Table 7: Distribution of respondents according to family history of breast cancer

Family history	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	p value
Positive	5 (7.7%)	2 (3.1%)	2.63	0.49-14.05	p=0.259
Negative	60 (92.3%)	63 (96.9%)	1	-	-
Total	65 (100%)	65 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance.					

Table 8: Distribution of respondents according to total duration of breast feeding

Duration of breast feeding	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	*p value
Absent	12 (18.5%)	4 (6.2%)	1	-	-
< 2 years	10 (15.4%)	4 (6.2%)	0.83	0.16-4.21	p=0.825
≥2 years	43 (66.2%)	57 (87.7%)	0.25	0.08-0.83	p=0.024
†Total	65 (100%)	65 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance.					

Table 9: Distribution of respondents according to use of hormonal contraceptives

Use of hormonal contraceptives	Case (n=65) n(%)	Control (n=65) n(%)	Odds Ratio	95% of CI	p value
Yes	33 (50.8%)	21 (32.8%)	2.11	1.04-4.31	*p=0.040
No	32 (49.2%)	43 (67.5%)	1	-	-
Total	65 (100%)	65 (100%)			
OR: Odd ratio, CI: Confidence interval * Regression analysis was applied to test the level of significance.					

DISCUSSION

As with many other cancers, the etiology of breast cancer appears to be multifactorial. Both endogenous and exogenous factors are known to increase breast cancer risk. Age, family history, reproductive factors, and a previous history of benign breast disease have all been identified as determinants of risk. [13]

In this study the age of the patients ranged from 30 to 69 years with the mean age of 48.9 (SD± 8.7) years in group-A; whereas the age of the patients ranged from 30 to 68 years with the mean age of 47.8 (SD ±8.7) years in group-B. The mean age of the patients in both groups was almost identical (p>0.05). This result was similar to other studies.[14,15,16] This result was also supported by Wasserberg et al. [17] and Chan et al. [19] In their study Wasserberg et al.[17] found that the age of the patients was ranging from 31 to 71 years with the mean age of 53.1 (SD ±3.1) years and Chan et al. [18] observed the age of the patients was ranging from 29 to 84 years with the mean age of 53.7 years. In this regards Fleming et al.[19] found that age of the patients was ranging from 32 to 83 years with the median of 53 years.[20] There was no statistically significant difference between the age group of the patients in group-A and group-B (p>0.05). In this regard Colleoni et al.[28] found that 4.9% patients were below the age of 35 years, 39.0% patients were in the age group of 35 to 50 years, 30.4% patients were in the age group of 51 to 60 years and 25.7% patients were above the age of 60 years.

Multiple studies have linked age at menarche, menopause, and first pregnancy to breast cancer risk. Similarly, late onset of menopause also increases breast cancer risk, with women who experience menopause prior to age 45 years having about half the incidence of breast cancer of women who experience menopause after age 55 years.[21,22] Other reproductive factors that have been found to influence breast cancer risk are age of first live birth and parity. The risk of breast cancer for women with her first live birth after age 30 years is nearly twice that of a woman whose first live birth occurred before age 20 years.[23] Conflicting evidence also exists in the literature regarding the role of different reproductive risk factors and development of breast cancer.[23-27] No viable study is so far being carried out among breast cancer patients in our perspectives.

Early age at menarche is reported to be associated with an increased risk of breast cancer. In our study a significant reduction of the risk of developing breast cancer was observed among women whose age at menarche was 13-15 years compared with women whose age at menarche was at 12 years or less (OR=0.296; 95% of CI=0.090-0.969; p=0.044). Among women age at menarche was more than 15 years, the risk was reduced materially (OR=0.092; 95% of CI=0.017-.0510; p=0.006). This result was supported by Meshram et al.[29] that Women who had menarche at early ages (≤12 years) were at increased risk compared with women who had menarche between 13-15 years of age (O.R.= 4.99, CI =2.26-10.99, p<0.001). Menarche after 15 years of age was associated with reduced risk of breast cancer (OR=0.33, CI =0.12- 0.87). A significant reduction in the risk of breast cancer in the range of 30–36% was found for women with onset of menstruation after age 15 or 16 compared to those of age 11 or before.[30,31,32,33] Talamini et al.[34] found no association between age at menarche and risk of breast cancer in the high risk populations. On the other hand Magnusson et al.[35] found a

statistically significant negative association between increasing age at menarche and breast cancer risk in women born before 1925 but not after. The negative findings of this study may be partly due to inaccuracies encountered in the reporting of menstrual histories, especially the imprecise recall of the actual age of menarche by elderly women apart from lower educational level. In addition age at menarche is influenced by childhood nutritional status and also by socioeconomic conditions.

In the present study a significant reduction of the risk of developing breast cancer was observed among women whose age at marriage was 18 years or less compared with women whose age at marriage more than 18 years (OR=0.413; 95% of CI=0.184-0.927; p=0.032). These findings are consistent with other studies carried out in India by Gajalakshmi and Shanta,[36] and Rao et al.[37]

The age at which a woman gave birth to her first live child is predictive of breast cancer risk and the risk increased with age at first birth. In this regards a significant increased of the risk of developing breast cancer was observed in this study among women whose age at 1 child was 21 to 25 years compared with women whose age at 1 child was at 20 years or less (OR=2.61; 95% of CI=1.18-5.78; p=0.018). Among women age at 1 child was more than 25 years, the risk was increased materially (OR=6.5; 95% of CI=1.56-27.92; p=0.010). A consistent finding reported from many epidemiologic studies was that the younger a woman is when she has her first childbirth, the lower is her risk of breast.[31,33,38,39] However, no positive association between age at first birth and the risk of breast cancer was also reported.[24,27,40,,41],

In the present study postmenopausal women had about 30% higher risk of breast cancer compared with premenopausal women (non-significant). Similar result was obsessed in the study of Reddy,[30] and Butt et al.[42] In the study of Reddy,[30] 2005, although an elevated risk of 1.4 was found for postmenopausal women compared with premenopausal women, the risk was not significant. Butt et al.[42] 2009 found an elevated risk of 1.3 was found for postmenopausal women compared with premenopausal women and the risk was not significant.

In this study women who attained menopause at 50 years of age and above were at slightly elevated risk (non-significant) of breast cancer compared with women who attained menopause at less than 50 years of age (OR=1.13; 95% of CI=0.40-3.20; p=0.820). Similar result was reported in other studies. [30,42,43] Lodha et al. [43] also found menopause attained menopause at 50 years of age and above were non-significant risk of breast cancer compared with women who attained menopause at less than 50 years of age. But menopause (≥50 years of age) was observed to be associated with increased risk of developing breast cancer. The risk was 7.9 times more among women who had menopause at or after 50 years of age compared to women who had menopause before 45 years (OR=7.91, CI=2.86-19.15).[29]

In this study women with family history of breast cancer were at elevated risk (non-significant) of breast cancer compared women without family history of breast cancer (OR=2.63; 95% of CI=0.49-14.05; p=0.259). Butt et al.[42] did not find enhanced risk of breast cancer among women with a family history of breast cancer. This result was also supported by Reddy that the two-fold risk observed in patients with the

family history of breast cancer (non-significant). Lodha et al.[43] found family history of breast cancer enhanced risk was found among women with a family history of breast cancer (OR= 3.89, CI=1.01-14.9; p= 0.048)

In the present study a significant reduction of the risk of developing breast cancer was observed among women whose total duration breast feeding was 2 years or more compared with women had absent breast feeding (OR=0.25; 95% of CI=0.08-0.83; p=0.024). However among women total duration breast feeding was less than 2 years, the risk was also reduced (non-significant) compared with women had absent breast feeding (OR=0.83; 95% of CI=0.16-4.21; p=0.825). In this regards Reddy,[30] found that women with history of no lactation were at higher risk compared to those who have lactated. Duration of breastfeeding appeared to be a significant risk factor for breast cancer. Compared with women who have breastfed their children for more than 18 months, women who have breastfed for less than six months were at significantly higher risk (RR 11.3; 95% CI 2.6–48.0). Several studies carried out around the world have reported lactation as a protective factor for breast cancer.[44,45]

In this study a significant increased the risk of developing breast cancer was observed among women whose used oral contraceptives compared with women without using oral contraceptives (OR=2.11; 95% of CI=1.04-4.31; p= p=0.040). This result was correlated with the study of Lodha et al.[43] that a significant association between OCP use and breast cancer, consistent with other studies which found association and was statistically significant.[46],[47] Several studies have found no significant association between history of oral contraceptive use and breast cancer.[42],[48]

CONCLUSION

Based on the current study it can be concluded that, significant reproductive factors of breast cancer are early age at menarche, age at marriage more than 18 years, age at 1st child above 20 years, total duration breast feeding less than 2 years or absent, and the use of oral contraceptives. There were non-significant associations between breast cancer and postmenopausal women; women who attained menopause at 50 years of age and above; family history of breast cancer. Because of case control nature of the study, certain bias arises in the study. Study duration and sample size was relatively small. Case-control multi-centered study involving large sample size should be conducted to provide a better conclusion and recommendation. Taking oral contraceptives should be avoided and these women have other choices of contraceptives, such as barrier methods and intrauterine contraceptive devices. Women with risk of developing breast cancer should perform regular breast cancer screening, including monthly breast self- examinations, yearly clinical breast examinations and mammograms after the age of 40 years. Surveillance of women at high risk is useful in detecting breast cancer at an early stage. Raising awareness about the procedure and screening for high risk women so that it can be diagnosed in the initial stages and thus reduces mortality.

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