

# Risk Factors of Breast Cancer Among Patients with Breast Cancer at a Tertiary Care Hospital

Zaid Ashraf, Muhammad Muddasar and Umair Safdar

## ABSTRACT

**Objective:** To determine frequency of risk factors of breast cancer among patients with breast cancer at a tertiary care hospital.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the department of Surgery, District Headquarters Teaching Hospital, Sahiwal from June 2016 to June 2017.

**Materials and Methods:** We recruited consecutive 220 patients with breast cancer in this cross – sectional study. The total duration of the study was 1 year from June 2016 to June 2017. Histopathologically confirmed cases of breast cancer were taken and interviewed for their risk factors such as family history, use of oral contraceptive medication and obesity.

**Results:** Mean age of our study cases was noted to be  $50.41 \pm 6.62$  years. Mean BMI in our study was noted to be  $24.85 \pm 2.37$  kg/m<sup>2</sup>. Mean disease duration of our study cases was  $10.95 \pm 4.61$  months (ranging from 7 months to 24 months). Mean age at menarche was  $13.87 \pm 0.756$  years (range 12 to 15 years). Mean age at menopause was  $43.53 \pm 1.07$  years. Family history of breast cancer was seen in 44 (20%), use of oral contraceptives was noted in 103 (46.8%) and obesity was present in 17 (7.7%) of our study cases.

**Conclusion:** Use of oral contraceptive drugs, no history of breastfeeding and family history of breast cancer were the major factors leading to carcinoma breast in our study. Family history of breast cancer was significantly associated with increasing age, socioeconomic status, residential status, breastfeeding and level of education while use of oral contraceptive drugs was significantly associated with age, parity, socioeconomic status and breastfeeding.

**Key Words:** Breast cancer, breastfeeding, family history, oral contraceptive.

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## INTRODUCTION

Breast cancer has been associated with significant impact on the health and productivity of the female patients and leads to exponential increase in psychological stress. It is one of the commonly diagnosed cancer females<sup>1, 2</sup>. Almost 1.4 million new patients of breast cancer were diagnosed in 2008 while approximately half million deaths were recorded in developing as well as developed countries due to breast cancer<sup>3</sup>. However it ranks top of list among common malignancies in developed nations while in developing countries it is on the 2<sup>nd</sup> position after cervical cancer<sup>2</sup>. Statistics from USA show that 32 % patients of all new cases represent breast cancer in US women and it is associated with 15 % cancer related deaths.

In fact it is second leading cause of death in these women after lung cancer. World Health Organization (WHO) estimates have reported that total number of cancer patients will increase 2 folds by the year 2020 in developing countries<sup>4</sup>. Breast cancer is not much common in young females and around 2 % confirmed cases of breast cancer are below the age of 35 years. However breast cancer in young patients have been reported to have more aggressive behavior which exhibits poor prognosis and un-desired clinical outcomes than those of older patients. In breast cancer, patients aged equal or less than 40 years are referred to be young patients. In young females, disease incidence is low, estimated to be around 17 patients per 100000 young female population and/or less than 6 % among patients with breast cancer of any age group<sup>5 - 10</sup>. Different risk factors have been reported in different studies with varying rates of factors leading to the development of breast cancer, an Iranian study, however, has documented positive, family history, low parity, use of oral contraceptive medication and short breastfeeding periods to be most important risk factors in the development of breast cancer. Veisy et al<sup>1</sup>

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reported use of oral contraceptive was present in 70.2 % women with breast cancer. Ghiasvand et al <sup>6</sup> reported family history of breast cancer in 17.3 % women with breast cancer and obesity in 39.4 % women.

This study was done to ascertain different factors responsible for the development of breast cancer in our population.

## MATERIALS AND METHODS

We recruited consecutive 220 patients aged less than 60 years of age, having breast cancer stages 2 – 4 irrespective of disease duration of breast cancer presenting at department of Surgery, District Headquarters Teaching Hospital, Sahiwal. Patients having any other malignancy and recurrent cases of breast cancer were excluded from our study. The total duration of the study was 1 year from June 2016 to June 2017 in this cross-sectional study. Histopathologically confirmed cases of breast cancer (diagnosed on the basis of Fine needle aspiration cytology (FNAC) was taken when cytological examination reveals aggregates of atypical ductal epithelial cells) were taken and interviewed for their risk factors such as family history (It was deemed as positive if breast cancer was diagnosed in first degree relatives (mother, sisters and daughters), use of oral contraceptive medication (it was taken as positive if the patients used contraceptive pill for more than one year) and obesity (BMI more than 27.5 kg/m<sup>2</sup>). All the data was entered and analyzed using SPSS-18. Mean and standard deviation for the age, Height, age at menarche, age at menopause, disease duration, weight and duration of disease was calculated. Frequencies and percentage were calculated for the categorical variables like age groups, socioeconomic status, educational level, history of breast feeding, residential status, family history, use of oral contraceptive pills (Present/Absent) and Obesity (Obese/Normal/overweight).

## RESULTS

Our study comprised of a total of 220 women presenting with breast cancer meeting inclusion criteria of our study. Mean age of our study cases was noted to be 50.41 ± 6.62 years (ranging from 40 to 60 years). Majority of our patients i.e. 170 (77.3%) were from age group of 46 – 60 years of age. Mean height of our study cases was 159.21 ± 9.43 centimeters while mean weight was 65.10 ± 10.89 kilograms. Mean BMI in our study was noted to be 24.85 ± 2.37 kg/m<sup>2</sup>. Mean disease duration of our study cases was 10.95 ± 4.61 months (ranging from 7 months to 24 months), furthermore majority of our patients i.e. 168 (76.4%) presented between 6 – 12 months duration of illness. Mean age at menarche was 13.87 ± 0.756 years (range 12 to 15 years). Mean age at menarche in patients with positive family history of breast cancer was 14.18 ± 0.390 years compared with 13.79 ± 0.80 years in those without

positive family history (p = 0.002). Mean age at menarche in patients with positive history of oral contraceptive use was 13.64 ± 0.752 years compared with 14.07 ± 0.704 years in those without positive family history (p = 0.000). Mean age at menopause was 43.53 ± 1.07 years. Mean age at menopause in women with positive family history of breast cancer was 43.67 ± 0.98 years while that of without family history was 43.45 ± 0.88 years (p = 0.337). Mean age at menopause in women with history of oral contraceptive was 43.62 ± 0.91 years while that of without family history was 43.51 ± 0.56 years (p = 0.275). Family history of breast cancer was seen in 44 (20%), use of oral contraceptives was noted in 103 (46.8%) and obesity was present in 17 (7.7%) of our study cases.

**Table No. 1: Stratification of mean disease duration with regards to family history and oral use of contraceptives.**

Risk factors		Disease duration (In Months)		P - value
		Mean	SD	
Family History	Yes (n=44)	16.23	6.23	<b>0.001</b>
	No (n=176)	10.89	4.14	
Oral contraceptives	Yes (n=103)	10.93	5.26	<b>0.968</b>
	No (n=117)	10.96	3.97	

## DISCUSSION

Breast cancer is common presentation in surgical departments with its proportions increasing day by day and it is one of the commonly diagnosed cancer females<sup>11-15</sup>. Our study comprised of a total of 220 women presenting with breast cancer meeting inclusion criteria of our study. Mean age of our study cases was noted to be 50.41 ± 6.62 years (ranging from 40 to 60 years). Majority of our patients i.e. 170 (77.3%) were from age group of 46 – 60 years of age. In a study conducted at Karachi by Memon et al <sup>16</sup> has documented 47.8 ± 12.4 years mean age of women with breast cancer. In another study <sup>17</sup> also done at Karachi reported 47.5 ± 12.1 years mean age of patients presenting with breast cancer. Nazir et al <sup>18</sup> reported 46.25 years mean age of the patients having breast cancer. Nisar et al<sup>19</sup> reported 48 years mean age of the patients with breast cancer.

Majority of the patients i.e. 62.3 % were illiterate and 30.5% had their education up to matriculation. Memon et al<sup>16</sup> from Karachi also reported 50.4% were illiterate, 38 % primary and 11 % having secondary education. These findings are similar to that of our study results. Another study from Karachi <sup>17</sup> reported 50 % patients

were illiterate which is in compliance with that of our study results.

History of breastfeeding was positive in 42.7 % of our study cases. A study conducted by Memon et al<sup>16</sup> from Karachi reported 61 % history of breast feeding which is slightly higher than that of our study results. Faheem et al<sup>8</sup> reported 41.7 % patients had history of breastfeeding which are in compliance with that of our study results. de Bruin MA et al<sup>20</sup> reported 42 % history of breastfeeding in Asian women. Nazir et al<sup>18</sup> also reported very high frequency of breastfeeding in patients of breast cancer which is different from our study results while Nisar et al<sup>19</sup> has documented 33.33 % history of breastfeeding.

Parity more than 3 was noted in 118 (53.6%) of our study cases. Similar results have been reported by Memon et al<sup>16</sup> from Karachi. Nazir et al<sup>17</sup> also reported 67 % patients with breast cancer had parity more than 3.

Mean disease duration of our study cases was  $10.95 \pm 4.61$  months (ranging from 7 months to 24 months), furthermore majority of our patients i.e. 168 (76.4%) presented between 6 – 12 months duration of illness. Ahmed et al<sup>21</sup> reported mean disease duration to be  $7.67 \pm 0.291$  months. Mean age at menarche was  $13.87 \pm 0.756$  years (range 12 to 15 years). A study done by Memon et al<sup>16</sup> from Karachi documented  $12.96 \pm 1.60$  years mean age at menarche. Nazir et al<sup>18</sup> reported similar results. Mean age at menopause was  $43.53 \pm 1.07$  years. A study done by Memon et al<sup>16</sup> reported from Karachi  $46.35 \pm 6.65$  years mean age at menopause of the ladies with breast cancer.

Family history of breast cancer was seen in 44 (20%) while a study conducted by Memon et al<sup>16</sup> from Karachi reported 13.3 % positive family history which is in compliance with that of our study results. Another study from Karachi<sup>17</sup> reported 20 % patients of breast cancer had positive family history which is same as that of our study results. de Bruin MA et al<sup>20</sup> reported as high as 50 % family history of breast cancer in Asian women which is quite higher than that of our study results. Nazir et al<sup>18</sup> reported 14.5 % family history in patients presenting with breast cancer which is close to our study results. Nisar et al<sup>19</sup> reported 34 % family history was positive in patients with breast cancer which is slightly higher than that of our study results. Ghiasvand et al<sup>6</sup> reported family history of breast cancer in 17.3 % which is close to our study results. Faheem et al<sup>8</sup> also reported 20 % family history which is same as that of our study results.

Use of oral contraceptives was noted in 103 (46.8%) these findings are different from that of Memon et al<sup>16</sup> who reported 15.2 % use of oral contraceptive which is quite less than that of our study results. Nazir et al<sup>17</sup> 7% use of oral contraceptives which is quite lower than that of our study results. Nisar et al<sup>19</sup> reported 25.33% use of oral contraceptive. Veisy et al<sup>1</sup> reported use of

oral contraceptive was present in 70.2 % women with breast cancer.

Mean BMI in our study was noted to be  $24.85 \pm 2.37$  kg/m<sup>2</sup>. obesity was present in 17 (7.7%) of our study cases. de Bruin MA et al<sup>20</sup> reported similar results. Ghiasvand et al<sup>6</sup> reported women with breast cancer had obesity in 39.4 %.

## CONCLUSION

Use of oral contraceptive drugs, no history of breastfeeding and family history of breast cancer were the major factors leading to carcinoma breast in our study. Family history of breast cancer was significantly associated with increasing age, socioeconomic status, residential status, breastfeeding and level of education while use of oral contraceptive drugs was significantly associated with age, parity, socioeconomic status and breastfeeding.

### Author's Contribution:

Concept & Design of Study:	Zaid Ashraf
Drafting:	Muhammad Muddasar
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Final Approval of version:	Zaid Ashraf & Muhammad Muddasar

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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