

## BREAST CANCER AMONG PAKISTANI WOMEN IN REFERRAL HOSPITALS: AN OVERVIEW OF RISK FACTORS

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### Abstract

The aim of this study was to determine the significance of various reproductive risk factors amongst Pakistani women suffering from breast carcinoma. This observational study was carried out from March 2007 to February 2009 at three hospitals. The women who presented with breast swelling with or without discharge from nipple were included in the study. The diagnosis of breast cancer was confirmed by histopathological examination. A questionnaire included history and various reproductive risk factors. The study patients were divided into two groups by their menopausal history – premenopausal and post-menopausal as ‘group A’ and ‘group B’, respectively. A total of 70 patients had the diagnosis of breast cancer. Of them, 32 were in group A and 38 in group B. Regarding age distribution, 49% were found in  $\geq 51$  years of age and 29% in the age group 30 – 40 years. The mean age at menarche was 13.3 years in group A and 12.4 years in group B. Nulliparity was seen in 12.5% cases in group A and 5.26% in group B. History of first full term pregnancy (FFTP) below the age of 20 was present in majority of cases in both groups though higher in group B. Breast cancer in post-menopausal women was exclusively found among those who had early menarche ( $\leq 11$  years) and was more frequent among those who had FFTP below 20 years of age compared with the pre-menopausal group (88% vs. 66%). The study showed higher frequency of breast cancer in post-menopausal women having early menarche and also more frequent among those with early FFTP. Parity, breast feeding, oral contraceptive pill use were not related to breast cancer.

*Ibrahim Med. Coll. J. 2010; 4(1): 1-3*

**Indexing Words:** Breast carcinoma, risk factors, genetics.

Breast cancer is the commonest malignancy and the second most common cause of cancer related deaths among females.<sup>1</sup> The number of breast cancers diagnosed is on the rise each day and approximately one million new cases appear in the world each year.<sup>1</sup> In the female population of the developed world there is considerable evidence associating various reproductive factors with the etiology of breast cancer.<sup>2</sup> Breast cancer risk is high among women with increasing age, early menarche ( $< 11$  years age), late menopause, nulliparity, first full term pregnancy (FFTP) after the age of thirty, family history of endometrial cancers, failure to lactate, and exogenous hormone intake.<sup>3</sup> The effect of these factors by age or menopausal status at the time of diagnosis

may help to give a better understanding of their role in the etiology of breast cancer.<sup>4</sup>

Breast carcinoma is also one of the commonest cancers among Pakistani women. The aim of this study was to investigate the significance of various reproductive factors amongst Pakistani women suffering from breast carcinoma.

### Subjects and Methods

The study was conducted from March 2007 to February 2009 at three hospitals (Hamdard University Hospital, Kutiyana Memon Hospital and Burhani Hospital) of

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Karachi where authors practice. The female patients who presented with swelling in breast and /or discharge from nipple and on cytology and / or tissue diagnosis confirmed as breast carcinoma were included in this study. History and the risk factors like age, age at menarche, age at menopause, age at FFTP, family history of carcinoma of breast, parity, history of lactation, history of exogenous hormone intake were recorded. Data was entered on Microsoft Excel and analyzed. According to menstrual status, these patients were divided in two groups- pre-menopausal as 'group A' and post-menopausal as 'group B'.

### Results

Overall, 70 patients presented with swelling in their breast with or without discharge from nipple. Cancer was diagnosed after cytology. Of these 70 patients, 32 were in group A and 38 in group B. The mean age at menarche in group A was 13.28 years and in group B 12.42 years. The post-menopausal breast cancer was exclusively found among those who had early menarche ( $\leq 11$  years). The breast cancer in postmenopausal was more frequent among those who had full term pregnancy below 20 years of age compared with the pre-menopausal group (88% vs. 66%).

All parous women gave a positive history of lactation of more than two years. The post-menopausal group with breast cancer showed higher parity compared with the pre-menopausal breast cancer group.

Family history of endometrial carcinoma was present in 2 patients from group A and 4 from group B. History of exogenous hormone intake was present in two patients in each groups.

### Discussion

The age at menopause could not be taken correctly and so the reproductive span could not be estimated in relation to breast cancer. Additionally, the number of women presenting with breast swelling with or without discharge from nipple remained unknown. Likewise, the histopathological typing of cancer also could not be confirmed. Had all these information been provided, the study could have been more valuable in determining risk factors. Despite having all these limitations, this study revealed that the Pakistani women having early menarche less than 11 years bear special risk for developing breast cancer in post-menopausal age. The

other important finding is that the women who had FFTP below 20 years need to be educated for more frequent monitoring and self-exam for breast-lump. Breast cancer remains the second most common cause of cancer related deaths in women.<sup>1</sup> Minor risk factors include early menarche, late menopause, late or no child birth, hormone replacement therapy (HRT), lactation, postmenopausal obesity, alcohol and smoking.<sup>5</sup> Post menopausal women are considered to be at a high risk of breast cancer and there is considerable evidence that reproductive factors play a major role in the etiology of breast cancer.<sup>4</sup>

Early menarche was found significant in this study and is consistent with other findings.<sup>6</sup> Various studies in the west have shown that nulliparity and late age at first birth increases the life time incidence of breast cancer.<sup>6,7</sup> In contrast, this study showed no such association with parity which remains to be explained. However, FFTP below 20 years of age in relation to breast cancer of the study is found to be consistent to other studies.<sup>6,8</sup> According to our observation early marriage and subsequent FFTP occur at an early age as compared to the western society.

Decreased parity with less than 3 full term pregnancies (FTP) is considered as one of the established risk factor for post menopausal women. Among multi-parous women an increasing number of FTP was associated with a statically significant decrease in the risk of breast cancer,<sup>9</sup> which was inconsistent in the study and need further elaboration. Similarly, exogenous hormone intake is associated with breast cancer risk in the western women but in our study (6.25% in group A and 5.26% in group B) and other local studies<sup>9</sup> showed little or no use of exogenous hormones.

Other risk factors like genetic predisposition and mutant gene (BRCA1 and BRCA2) could have played a role in developing breast cancer but these factors have not been addressed.<sup>6,10</sup>

### Conclusion

The study revealed that the female populations of Pakistan, who have early menarche, bear special risk for developing breast cancer in post-menopausal age. The other important finding is that the women who had FFTP below 20 years need monitoring for the risk of breast cancer. However, many other known risk factors either could not be related to breast cancer or

could not be properly investigated. Further study is needed to determine the prevalence of breast cancer and to identify its risk factors.

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