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Frequency of Well Established Risk Factors in Indian Patients with Breast Cancer

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Abstract
Background: *The past three decades have seen a rapid rise in the incidence of breast cancer. Well established risk factors of breast cancer like early age at menarche, late age at menopause, late age at first child birth, nulliparity, post menopausal obesity and lack of exercise, hormone replacement therapy, family history of breast cancer, benign breast disease have been derived from population based cohort studies conducted in western population. Our aim is to find out how frequent these well established risk factors are present in rural Indian patients with breast cancer*
Materials & Methods: *Data analysed were collected retrospectively from a study conducted in Raja Muthiah Medical College during the period April 2014 to December 2017. All newly detected and histologically confirmed cases of carcinoma breast were included in the study. Male breast cancer, sarcoma, secondaries to the breast were excluded. Demographic data, history on risk factors, clinical examination findings were recorded and analysed.*
Results and Discussion: *Out of 70 newly detected cases of carcinoma breast cancer, 28 were premenopausal, 42 were post menopausal. Average age at presentation was 48 years which is less compared to western population. Greater proportion of cases presented in the stage II & III (> 80 %). Early age at menarche defined as <12 years was present in 14% of cases. Average parity was 1.8, nulliparity was present in % of cases. Age at first child birth > 35 years was present in 3 % of cases, age at first child birth > 30 years was present in 12% of cases. Family history of breast cancer was present in 7 % of cases. Average BMI was 28.5. History of benign breast disease was present in 15 % of cases.*
Conclusion: *The frequency of well established risk factors is low as compared to western population. Additional population based studies on Indian population are needed to explain the rising incidence of breast cancer in India.*
Keywords: *breast cancer, risk factors, incidence.*

Introduction

Breast cancer is the most common cancer in females in the western population. In India, breast cancer has surpassed cervical cancer as the leading cause of cancer in females especially in urban area[1]. Population based cancer registries from both rural and urban areas have shown that there has been a significant rise in the incidence of breast cancer over the past three decades[2]. Among the risk factors for breast cancer, some are well established by population based cohort studies conducted in the western population[3] while some factors are still under investigation or are poorly established. Well established risk factors of breast cancer are early age at menarche, late age at first child birth, nulliparity, late age at menopause, post menopausal obesity and lack of exercise, hormone replacement therapy, family history of breast cancer, certain benign breast disease[4-7]. The aim of our study is to find out how frequent these well established risk factors are present in the rural Indian population with breast cancer.

Materials and Methods

This is a retrospective observational study conducted in Rajah Muthiah medical college, Chidambaram which serves as a referral centre for the rural population of east tamilnadu during the period April 2014 to December 2017. All newly detected and histologically confirmed cases of carcinoma breast were included in the study. Male breast cancer, sarcoma, secondaries to the breast were excluded. Demographic data, history on risk factors, clinical examination findings were recorded and analysed.

Results

Total number of patients included in the study was 70 of which 28 patients were premenopausal and 42 were postmenopausal. Average age at presentation was 48 years (range 31 to 83 years). Majority of patients belonged to the age group of 40 – 50 years(41 %) followed by 50 – 60 age group(36%) as shown in table 1. Early age at menarche < 12 years was present in 5% of cases. Average age at first child birth was 23 years. Late age at first child birth > 30 years was present in 3% of cases. Average parity was 1.8 (range 0 to 6). 13% of our patients were nulliparous whereas parity more than or equal to 3 was present in 40% of cases (table 2). Age at menopause >50 years was present in < 5% of cases. Positive family history was present in 7% of patients. Average BMI was 28.5 (range 20 to 36). BMI > 30 was present in 26 % of individuals (table 3). History of benign breast diseases was present in 12% of cases.

Table1: age distribution of patients

Age in years	No. of patients	Percentage
<30	1	1
30 – 40	3	4
40 – 50	28	41
50 – 60	25	36
60 – 70	10	14
70 – 80	2	3
>80	1	1

Table 2: parity of patients

Parity	No. of patients	Percentage
0	9	13
1	10	14
2	23	33
3 or more	28	40

Table 3: BMI of patients

BMI	No. of patients	Percentage
< 20	3	4
20 – 25	10	14
25 – 30	39	26
30 - 35	16	23
>35	2	3

Discussion

Causation of breast cancer is multifactorial. Risk factors of breast cancer as described in the literature have been derived from population based cohort studies conducted in the western population[3]. Risk assessment models like gail, clauss are based on these well established risk factors. But in our study only 36 % of our breast cancer patients had atleast one of the above mentioned risk factors as compared to 67% in western studies[8]. So in an average rural Indian patient without any of these well established risk

factors except age and gender, it becomes difficult to answer the question as to 'why I got this cancer'. Statistics from population based cancer registries (PBCR) reveal that there is a significant rise in the incidence of breast cancer in both rural and urban areas though the incidence is high in urban areas[2]. This indicates that urbanization might have a major influence on the recent increase in incidence of breast cancer. But urbanization is a broad term and we need to be more specific inorder to formulate sound cancer control strategy for primary prevention. So additional research is needed on the influence of environmental factors in the causation of breast cancer.

Conclusion

Frequency of well established risk factors of breast cancer is low as compared to the western population

Additional research is needed to explain the increasing incidence of breast cancer in rural as well as urban population.

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