



RISK FACTORS AND PRESENTATIONS AMONGST PRE AND POST MENOPAUSAL BREAST CANCER PATIENTS: A COMPARATIVE ANALYSIS IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: While the majority of breast cancer patients in western countries are postmenopausal and in their sixth and seventh decades of life, the picture is quite different in India where more than 80% of Indian patients are aged less than 60 years. Thus the study aimed to emphasize on the distribution of different risk factors especially in rural population, and to find if there is any correlation of these risk factors with postmenopausal age group.

Materials and Methods: This is a prospective longitudinal study involving a total of 118 female patients who were histologically or cytologically confirmed with breast cancer. Patients were divided into two groups based on their menopausal status viz premenopausal and postmenopausal. Data on clinical presentation, evident findings of cancer, diagnostic tests and diagnosis and tumor characteristics were collected from medical records available at the central registry of the hospital. Information about patient's personal habits, risk factors, well-being was obtained by interviewing either the patient or the patient's caretakers.

Results: Overall 50.85% patients (n=60) presented with a history of 2-6 months duration, 25.42% (n=30) presented with history for more than 12 months duration and 23.73% (n=28) presented with history of 7-12 months duration of symptoms. About 55.08% (n=65) patients had a lump in the right breast and 44.91% (n=53) patients had a lump in the left breast. Risk factors were duly adjudged.

Conclusion: Risk factors and presentations vary among pre and post menopausal breast cancer patients. Mass awareness programs encouraging self-detection of the disease can be of prime importance in this scenario.

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INTRODUCTION

Breast carcinoma is the most common malignant tumor and the leading cause of cancer death in women, with annual reporting of more than one million cases worldwide. Breast cancer is the most frequent cause of cancer related death for women in both developed and developing countries. ^[1] The incidence of breast cancer is rising in India (22.9%) and is now the second most commonly diagnosed cancer in women after cervical cancer. The age standardized incidence rate varies from 9 - 28.6 per 100000 women in India. ^[2]

Though there are various factors which increases the risk of breast cancer, proper relationship of carcinogenicity with these factors remains largely unestablished. Unmodifiable risk factors ranges from gender, age, genetic factors, familial history, personal history of breast cancer, dense breast tissue, menstrual periods to breast radiation early in life. Lifestyle related risk factors include history of not having pregnancy or

pregnancy at late ages, using hormone replacement therapy, not breast-feeding, being overweight or obese and alcohol intake. ^[3]

While the majority of breast cancer patients in western countries are postmenopausal and in their sixth and seventh decades of life, the picture is quite different in India where more than 80% of Indian patients are aged less than 60 years. This study aims to emphasize on the distribution of different risk factors especially in rural population, and to find if there is any correlation of these risk factors with postmenopausal age group.

MATERIALS AND METHODS

This is a prospective longitudinal study conducted in the Department of Surgery and Pathology in a tertiary care teaching hospital in eastern India for a period of 12 months. A total of 118 female patients who were histologically or

cytologically confirmed with breast cancer were included in the study. Institutional ethics approval was obtained prior initiation of the study and only those patients who given written consent to participate in the study were included thereafter. Patients were divided into two groups based on their menopausal status viz premenopausal and postmenopausal. Patients who had no menstrual flow since 12 months were considered as postmenopausal and the rest were considered as premenopausal. Patients who had natural menopause were only included in the study population. Patients who have undergone hysterectomy or having any other ovarian problems or a personal history of cancer other than breast cancer or whose menopausal status was not specified were excluded from the study.

Data on clinical presentation, evident findings of cancer, diagnostic tests and diagnosis and tumor characteristics were collected from medical records available at the central registry of the hospital. Information about patient's personal habits, risk factors, well-being was obtained by interviewing either the patient or the patient's caretakers. The two study groups were later compared and evaluated regarding the risk factors associated, nature of disease presentation, diagnostic pattern, tumor characteristics and treatment modalities.

For diagnosis of breast cancer, all those with definite lump or lumpiness, any discharge from nipple were assessed by FNAC to look for any sign of malignancy which was confirmed later by histopathological examination thereby further helping in grading and staging. Other modalities used were ultrasound, X-ray, PET scan, blood test which helped in follow up and in metastatic workup.

Statistical analysis was performed using SPSS statistical software (SPSS, Chicago, IL, USA), version 17. Multivariate logistic regression analysis was used to calculate odds ratio and 95% confidence interval (CI) for risk factors associated with breast cancer. In order to measure the odds ratio, we have taken premenopausal as controls because they have relatively reduced risk compared with postmenopausal. P < 0.05 was considered to be statistically significant.

Table 1 Various Risk Factors distribution among Pre and Post menopausal patients

Risk Factors	Pre-Menopausal Patients (44) [n(%)]	Post-Menopausal Patients (74) [n(%)]	Total (118) [N(%)]
Menarche Age (Years)			
≤ 12	32 (72.7)	33 (44.6)	65 (55.08)
13 - 14	7 (15.9)	27 (36.5)	34 (28.81)
>14	5 (11.4)	14 (18.9)	19 (16.10)
Age at 1st Pregnancy (Years)			
<15	2 (4.5)	24 (32.4)	26 (22.03)
16 - 20	33 (75.0)	40 (54.1)	73 (61.86)
>20	9 (20.5)	10 (13.5)	19 (16.10)
Parity (Years)			
0	10 (22.7)	18 (24.3)	28 (23.73)
1 - 2	10 (22.7)	24 (32.4)	34 (28.81)
3 - 4	20 (45.5)	22 (29.7)	42 (35.59)
5 - 6	4 (9.1)	10 (13.5)	14 (11.86)
Habits			
No	43 (97.73)	71 (95.94)	114 (96.61)
Alcoholic	0 (0)	2 (2.70)	2 (1.69)
Smoking	1 (2.27)	1 (1.35)	2 (1.69)
Both	0 (0)	0 (0)	0 (0)

RESULTS

The present study included 118 female patients of which 44 were premenopausal while 74 had reached menopause. In 74 postmenopausal patients, 40.54% (n=30) attained menopause at less than 45 years of age and 59.46% (n=44) attained menopause at age more than or equal to 45 years. In this study, the age at diagnosis ranged between 30 and 70 years with a mean age of 45.97±8.65 years.

Socio-demographic analysis conferred 48.3% (n=57) of the patients having no primary education, 34.75% (n=41) had primary education and the rest of 16.95% (n=20) had secondary education. Most of the patients were housewives and few were daily wage laborers. A summary of risk factors distribution among pre - and post-menopausal women was shown in Table 1.

Other risk factors like presence of dense breast tissue, familial history of breast cancer, history of HRT and abortion was adjudged. (Table 2)

Table 2 Risk Factors amongst Pre and Post Menopausal Patients

Risk Factors	Pre-Menopausal Patients (44) [n(%)]	Post-Menopausal Patients (74) [n(%)]	Total (118) [N(%)]	Odds Ratio
Dense Breast Tissue				0.9664
Yes	30 (68.2)	51 (68.9)	81 (68.64)	
No	14 (31.8)	23 (31.1)	37 (31.36)	
Familial History				0.4701
Yes	8 (18.18)	7 (9.46)	15 (12.71)	
No	36 (81.82)	67 (90.54)	103 (87.29)	
History of HRT/OCP				0
Yes	0 (0)	3 (4.05)	3 (4.05)	
No	44 (100)	71 (95.95)	115 (97.45)	
Abortion				1.6541
Yes	16 (36.36)	19 (25.68)	35 (29.66)	
No	28 (63.64)	55 (74.32)	83 (70.34)	

Majority of the patients presented with a lump in the breast. Pain, nipple retraction and nipple discharge were present in some patients along with a lump in the breast. (Table 3)

Table 3 Clinical Presentation in Pre and Post Menopausal Patients

Clinical Presentation	Pre-Menopausal Patients (44) [n(%)]	Post-Menopausal Patients (74) [n(%)]	Total (118) [N(%)]
Only Lump	33 (75)	53 (71.6)	86 (72.88)
Lump + Pain	23 (52.3)	46 (62.2)	69 (58.47)
Lump + Nipple retraction	10 (22.7)	16 (21.6)	26 (22.03)
Lump + Nipple discharge	5 (11.4)	12 (16.2)	17 (14.49)
Lump + Pain + Nipple retraction + Nipple discharge	7 (15.9)	11(14.9)	18 (15.25)

Overall 50.85% patients (n=60) presented with a history of 2-6 months duration, 25.42% (n=30) presented with history for more than 12 months duration and 23.73% (n=28) presented with history of 7-12 months duration of symptoms. About 55.08% (n=65) patients had a lump in the right breast and 44.91% (n=53) patients had a lump in the left breast.

DISCUSSION

Globally breast cancer is the most common invasive cancer in women. Affecting around 12% of women worldwide, the

incidence of breast cancer varies greatly from lower and middle income countries to the developed countries.^[4]

In the light of age propensity, majority of the studies stated that breast cancer is a disease of older women. Its incidence increases with age, with rare presentation below the age of 20 years.^[5,6,7] Our present study on the similar context did not encounter a single case of less than 20 years in age. Majority of patients in this study were between the third and fifth decade of their life similar to other studies reported across the globe.^[6] A majority of premenopausal patients were found to be in the third and fourth decade of their life while most of the postmenopausal cases belonged to the fifth and sixth decade of their life.

While there are studies showing no association between age at menarche and breast cancer risk, nor any apparent association with the estimated total duration of breast mitotic activity,^[8] there are also studies confirming young age at menarche and old age at menopause increases breast cancer risk.^[9] Our present study revealed that early age of menarche as less than 15 years showed increased incidence of breast cancer.

Early age of first pregnancy is inversely related to breast cancer risk.^[10] This association perhaps reflects either a pregnancy induced maturation of mammary cells, and thus making them less susceptible to carcinogenic transformation or a long-lasting hormonal change or both. An international collaborative study of breast cancer and reproductive experience has been carried out in 7 areas of the world. In all areas studied, a striking relation between age at first birth and breast cancer risk was observed. It is estimated that women having their first child when aged under 18 years have only about one-third the breast cancer risk of those whose first birth is delayed until the age of 35 years or more.^[11] In this study, it was found that the majority of the women were at an age younger than 30 during their first pregnancy. However, information regarding the age at last pregnancy was lacking. Late age at last full-term pregnancy also has been found to be associated with a higher risk of breast cancer in few studies.^[7] More studies must be undertaken to investigate the possible association between age at any full term pregnancy and breast cancer risk.

High parity has generally been associated with low breast cancer risk in previous epidemiological studies.^[10,12] which was found in similarity with our study too.

Dense breast tissue means there is more gland tissue and less fatty tissue that is associated with epithelial proliferation and stromal fibrosis.^[13,14] The relation between these histological features and risk of breast cancer may be further explained by the known actions of growth factors that plays a pivotal role in breast development and carcinogenesis. Breast cancers originate in epithelial cells, so greater areas of fibroglandular tissue may reflect a greater number of cells that are at risk of carcinogenesis and/or an increased rate of epithelial proliferation.^[13,14] Unfortunately, dense breast tissue can also pose challenge for doctors to spot problems on mammograms.^[15,16,17] The present study revealed breast cancer is more in denser breast.

The nature of disease and tumor characteristics was found independent of the menopausal status and was related to the stage of the disease. Breast cancer tends to involve upper and central quadrants of either side more than any other quadrants.^[18] Lump in the breast was the chief complaint of

all the women in this study as similarly reported in various studies.^[6, 7, 19, 20] No patient presented with isolated complaint of pain or nipple discharge or nipple retraction. During clinical history, it was found that almost all women found a lump in their breast by themselves, but due to lack of knowledge, awareness, sensitization and family negligence about breast cancer they were not able to detect their disease. The problem of late presentation is mainly due to socioeconomic conditions like rural background, poverty and lack of awareness. Hence by educating the masses on self-breast examination and screening techniques, self-detection and thus early diagnosis of the disease can be boosted.

CONCLUSION

Worldwide, breast carcinomas comprise 10.4% of all the cancer incidences among women making it the most common type of non skin cancer in woman and the fifth most common cause of cancer death. Risk factors and presentations vary among pre and post menopausal breast cancer patients. Mass awareness programs encouraging self-detection of the disease can be of prime importance in this scenario.

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