Assessment of Risk Factors and Nutritional Status of Breast Cancer Patients Attending a Tertiary Care Hospital

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Abstract:
Background: *Breast Cancer is the most common diagnosed malignancy in women worldwide and in India. The peak occurrence of breast cancer in developed countries is above the age of 50 years, where as in India it is above the age of 40 years. Factors like overweight and obesity, nulliparity, H/O abortions, family H/O breast cancer, H/O use of OCPs, non feeding of breast milk have been associated with breast cancer risk.*
Objectives:*1: To assess the risk factors of breast cancer 2:To assess the nutritional status of study population.*
Materials and methods*: A hospital based cross sectional study was conducted among 50 histopathologically confirmed female breast cancer patients. A pretested questionnaire was administered and the study variables include age, age at menarche, menopausal status, history of abortions, family history of breast cancer, BMI etc.*
Results: *The age of the study population ranged from 30-80yrs. Nearly 60% of the study population were overweight and obese. Nulliparity and history of abortions were reported by 14% of study population and family history of breast cancer was seen among 8% of study participants .Regarding food intake in past one month, 50% had less than usual intake;6% had greater than usual and rest 44% stated that there was no change in the food intake.*
Conclusion: *Majority of the risk factors for breast cancer are modifiable, prevention of these risk factors will have significant impact on the occurrence of the breast cancer.*
Key words: *Breast cancer, risk factors, nulliparity, nutritional status, obesity.*

I. Introduction

Breast Cancer is the most common diagnosed malignancy in women worldwide and in India. It ranks second to cervical cancer. The burden of breast cancer is increasing in both developed and developing countries. The peak occurrence of breast cancer in developed countries is above the age of 50 years, where as in India, it is above the age of 40 years[1]. India is facing a cancer epidemic and by 2020 the breast cancer is set to overtake cervical cancer as the most common type of cancer among all women in India[2]

Factors like overweight and obesity, nulliparity, H/O abortions, family H/O breast cancer, H/O use of Oral contraceptive pills, non feeding of breast milk have been associated with breast cancer risk. Obesity leads to increased levels of fat tissue in the body that can store toxins and can serve as continuous source of carcinogens. Body fat is an important locus of endogenous oestrogen production and storage, and hence could increase the risk of breast cancer[3].

Though a large number of women are affected with breast cancer, there is paucity of data on the nutritional status of breast cancer patients in India. Hence, an attempt was made to study the risk factors of breast cancer and to assess the nutritional status of breast cancer patients.

II. Materials & Methods

The present study was a hospital based cross sectional study conducted during the months of November and December 2013. Fifty histopathologically confirmed breast cancer patients attending department of Oncology, King George Hospital, Visakhapatnam, were included and informed consent was taken prior to the study from all the study participants. A pretested questionnaire was administered and anthropometric measurements like weight and height were recorded . Body Mass Index was calculated using the standard formula. According to the South Asia specific regions[4.] the nutritional status was defined as follows.

1. <18.5 Kg/M^2 - Chronic Energy deficiency
2. $18.5\text{-}22.9$kg/m^2-Normal
3. $23\text{-}24.9$kg/m^2-over weight
4. $25\text{-}29.9$kg/m^2-Obese- I
5. ≥30kg/m^2-Obese-II

III.   Results

A total of fifty breast cancer patients were included in the present study. Age of study population ranged from 30-80yrs. Majority were in the age group of 40-60yrs. Median age of study population was found to be 50yrs and mean age at occurrence of breast cancer among study population was 47.12 yrs. Regarding educational status, 66% were illiterate,14% had primary education, 16% had secondary level of education and the rest were graduates. According to modified BG Prasad's classification[5], more than half(54%) of the study population belong to upper middle class followed by 36% in upper class and the rest 10% belong to lower class. Mean age at menarche was 13yrs and more than half(54%) attained menarche before the age of 13yrs.Nearly three fourths(74%) attained menopause and 12% underwent hysterectomy before attaining menopause.

Table1: Distribution of risk factors among the study population:

Risk factors	Frequency(N=50)
Overweight &Obesity	58%(29)
Nulliparity	14%(7)
History of abortions	14%(7)
Family history of breast cancer	8%(4)
Not given breast feeding	8%(4)
OCP usage	2%(1)

Nearly 60% of the study population were overweight and obese. Nulliparity and history of abortions was reported by 14% of study population and family history of breast cancer was seen among 8% of study participants. All the study participants were consuming non-vegetarian diet.

Table 2: Clustering of Risk factors among the study population

No of patients with risk factors	Frequency(N=50)
Patients with single risk factor	24%(12)
Patients with two risk factors	42%(21)
Patients with three risk factors	20%(10)
Patients with four risk factors	14%(7)

Regarding clustering of risk factors,42% had a cluster of two risk factors and 20% had a cluster of three risk factors.

Table 3: Distribution of study population based on BMI

BMI(kg/m^2)	Frequency (N=50)
≤18.5 kg/m^2(chronic energy deficiency)	8%(4)
18.5-22.9 kg/m^2(normal)	34%(17)
23.0-24.9 kg/m^2(over weight)	22%(11)
25.0-29.9 kg/m^2(obese I)	26%(13)
≥30.0 kg/m^2(obese II)	10%(5)

Nutritional status:

In our study only 34% had normal BMI and 58% have BMI >23 i.e. obese(or) overweight. Dieitic history: When the question " Is there any loss of weight in the last six months " was asked 38% reported that there was loss of weight. Regarding food intake in the past one month ,50% had less than usual intake,6% had greater than usual and rest 44% stated that there was no change in the food intake. Regarding eating problems,18% had anorexia,17% had complaints of nausea(or)vomiting and 3% stated that they feel full quickly .Nearly three fifths(58%) reported that their physical activity was decreased in the past one month.

IV.   Discussion

The present study has given an insight into the risk factors for breast cancer. In our study majority were in age of 40-60yrs with median age of 50yrs.This finding is consistent with previous studies done by Kamath et al[6] and Meshram et.al[7]. In our study, risk factors like nulliparity, history of abortions, family history of breast cancer were reported high, which were comparable to study by Kamath et.al and Bhadoria et.al[8].

As overweight and obesity were positively associated with breast cancer, it was reported high in our study. Our findings are in concurrence with P.Singh et.al in their study on breast cancer observed that there is a strong association with overweight and obesity with breast cancer, where as Mukul dixit et.al in their study showed a negative association of overweight and obesity with breast cancer[9].

V.   Conclusions

As majority of the risk factors for breast cancer are modifiable, prevention of these risk factors will have significant impact on the occurrence of the breast cancer.

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