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Original Research

Study of incidence, risk factors and stage of presentation in patients with breast cancer

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ABSTRACT:
Background: Breast cancer is the most common site-specific cancer in women and is the leading cause of death from cancer for women aged 20 – 59 years. Present study was aimed to study incidence, various risk factors, and stage of presentation in patients with Carcinoma of breast. **Materials & methods:** Present study was prospective, observational study, conducted in department of general surgery, at Department of General Surgery, at a tertiary care hospital. Study duration was of 2 years (October 2019 to September 2021). Inclusion Criteria included patients within age between 20 – 90 years, Includes both males and females, All patients with breast lumps and FNAC positive reports, Patients who belong to clinical Stage I, Stage II and Stage III disease. **Results & Conclusion:** A study of 50 breast carcinoma cases revealed peak incidence between 40-50 years, increased risk with early menarche and longer reproductive periods, and a significant role of family history. Most cases presented at advanced stages (II and III), likely due to delayed diagnosis, with older age linked to more advanced disease stages.
Key words: Breast cancer

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INTRODUCTION

Breast cancer is the most common site-specific cancer in women and is the leading cause of death from cancer for women aged 20 – 59 years. It accounts for 26% of all newly diagnosed cancers in females and is responsible for 15% of the cancer-related deaths in women.[1]

The incidence of breast cancer in India is on the rise and is rapidly becoming the number one cancer in females pushing the cervical cancer to the second spot. It is reported that one in 22 women in India is likely to suffer from breast cancer during their lifetime. The rise is being documented mainly in the metros but it can be safely said that many cases in rural India go unnoticed. [3]

Breast cancer causes 5,19,000 deaths in a year worldwide, about 9,00,000 women are diagnosed each year. Incidence of breast cancer is 0.26/1,00,000 in males and 20.01/1,00,000 in females. While mortality associated with breast cancer is 1.20/1, 00,000 in males and 4.32/1,00,000 in females. Mortality rates from breast cancer have increased during the past 60 years in every country. [2]

Breast cancer is a multifactorialdisease[4] and various factors contribute to its occurrence.[5] Changes in risk factors have led to an increase in the prevalence of breast cancer, which is increasing every day.[6]It is most often observed that due to lack of knowledge and ignorance, patients of carcinoma breast clinically present in a late stage of the disease. [7]

The management of breast cancer requires a complex multidisciplinary approach involving surgeons, radiotherapists, medical oncologists, and pathologists.

Present study was aimed to study incidence, various risk factors, and stage of presentation in patients with Carcinoma of breast.

MATERIALS & METHODS

Present study was prospective, observational study, conducted in department of general surgery, at Department of General Surgery, at a tertiary care hospital. Study duration was of 2 years (October 2019 to September 2021). Study was approved by institutional ethical committee.

Inclusion Criteria

- Age between 20 – 90 years
- Includes both males and females
- All patients with breast lumps and FNAC positive reports
- Patients who belong to clinical Stage I, Stage II and Stage III disease

Exclusion Criteria

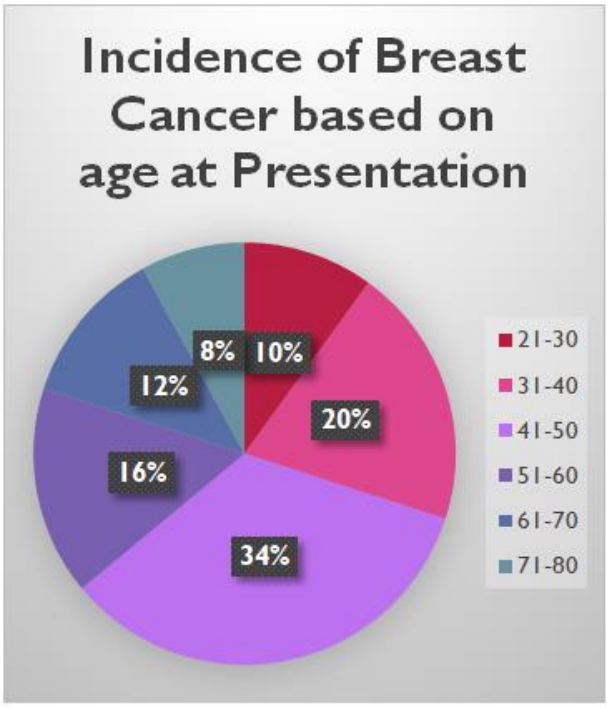
- Pregnant women
- Patients with benign breast diseases.
- All inoperable advanced breast malignancies.
- Patients with inflammatory breast Ca.
- Recurrent breast lump in a previously operated case of carcinoma breast.

RESULTS AND DISCUSSION

The data used in the study was obtained from 50 cases that were evaluated.

Table-1 – Incidence of Breast Cancer based on age at Presentation

Age in years	Number of patients	Percentage in study
21-30	5	10%
31-40	10	20%
41-50	17	34%
51-60	8	16%
61-70	6	12%
71-80	4	8%
TOTAL	50	100%



As age increases incidence of breast cancer increases with age. In india breast cancer was found more prevalent in between age of 5Th and 6TH decade.

In this study incidence of breast cancer is 34% between 41-50 years age cancer is more prevalent in 4Th and 5TH decade age group.

Major risk factors:

TABLE-2 Age of menarche

Age in years	Number of patients	Percentage in study
10-11	20	40
12-13	24	48
13-14	0	0
14-15	6	12
Total	50	100

Mean +/- SD = 11.98 +/- 1.26

As per the study it was seen majority of patients had menarche between 12-13years

Breast cancer risk increases with early menarche in this study 88% patient had menarche between 10-13 years of age after 12 years of age relative risk of breast cancer decreases 7% for each year women having menarche at 10 to 11 years have 2.2 times risk of breast cancer as compared to those having menarche at 12 years age according to peters et al.[8]

TABLE-3 Age at first birth in the patients

Age at first birth	Number of patients	Percentage in the study	Mac Mohan series Percentage[9]
17-20	32	64.0	32.9
21-25	14	28.0	27.9
26-30	4	8.0	39.2
Total	50	100	100

Mean ± SD: 20.64 ±3.03

Risk of breast cancer decreases if the first birth is as early as possible women with first full term pregnancy young than 30 years with more than three full term pregnancy having breast fed more than 3 years have significant protective effect against breast cancer. In this study, 64Percentage of people had their first birth during 17-20 years of age. MacMohan[9] series suggested equal incidence in all age groups.Thus, showing that although they had a younger age during their first birth, the incidence of breast cancer remained the same in the study.

In the present series none were nulliparous, 64Percentage of patients had their first childbirth before 20 years followed by 21-25 age group who constituted 28Percentage.

TABLE-4 Parity of the patients in the study

	Number of patients	Percentage
Parity 1	-	-
Parity 2	13	26
Parity 3	20	40
Parity 4	6	12
Parity 5 & above	11	22
Total	50	100

Mukherjee BN et al. suggested that except for parity, no other reproductive factor plays any role in the incidence of breast cancer.[10]In the study, none were nulliparous, 3 children were the most common value in about 40Percentage of the patients and 26Percentage had 2 children. Thus, it was noted that as none of the patients were nulliparous, no relationship between parity and incidence of breast cancer could be drawn.

TABLE-5 Duration of reproductive period in patients studied

Reproductive period	Number of Patients	Percentage in the study
<20	5	10
21-25	3	6
26-30	9	18
31-35	31	62
>35	2	4
Total	50	100

Mean ± SD: 29.76 ±5.38

Different studies have shown that larger duration of reproductive period was associated with more risk of breast cancer in this study 66% patient have reproductive period more than 30 years suggesting larger duration associated with high risk

TABLE-6 Patients who breast fed their babies

Breast feeding	Number of patients	Percentage in the study
Absent	-	-
Present	50	100
Total	50	100

Various studies have shown that women who have breast fed show a protective effect against breast cancer. However, the duration of lactation did not show an influence in reducing the risk of breast cancer. In our study all the patients had breast fed their babies for more than 6 months in duration. Hence the protective nature of breast feeding for breast cancer could not be well substantiated.

TABLE-7 Family history of breast cancer in patients studied

Family history	Number of patients	Percentage in the study	Kelly et.al percentage
Absent	35	70	60
Present	15	30	40
Total	50	100	100

In the present study, about 30Percentage had positive Family history for breast cancer while 70Percentage did not have any history.

The family history of breast cancer in the first- or second-degree relatives is associated with an increased risk of the disease in the patient. The relative risk with associated family history is 1.7 to 2.5 in women with first-degree relatives compared to 1.5 with second-degree relatives.

TABLE-8 Distribution of Menopausal Status of patients studied

Menopausal status	Number of patients	Percentage in the study	Raina et.al series percentage
Pre	23	46	49.7
Post	27	54	50.3
Total	50	100	100.0

In our study, it was noted that 46Percentage were in the pre-menopausal age group and 54Percentage in the post-menopausal age group. In other studies,Raina V et al.83 (2005) had 49.7% of patients in the pre-menopausal age group while the rest was post-menopausal.[11]

In this study, an apparent higher incidence is noted of cases in the post- menopausal age group.

STAGE OF DISEASE

TABLE-9 Correlation of Stage of disease and age in years of patients studied

AGE IN YEARS	STAGE OF DIESEASE			P VALUE
	Stage I (n=4)	Stage II (n=21)	Stage III (n=25)	
<40	1(25%)	8(38.1%)	6(24%)	0.02
41-50	1(25%)	11(52.4%)	5(20%)	
51-60	2(50%)	2(9.5%)	4(50%)	
>60	0	0	10(40%)	

In the present study it was noted that 50% of Stage I disease was noted between 51-60 years of age, while 52.4% of Stage II disease noted between 41-50 years of age and 40% of Stage III noted beyond 60 years of age, thus showing that with increase in age, there is an increase in the Stage of the disease.

TABLE-10 Correlation of Stage of disease and age of menarche in years of patients studied

Age of Menarche in years	Stage of disease			P value
	Stage I (n=4)	Stage II (n=21)	Stage III (n=25)	0.179
10-11	1 (25%)	9 (42.9%)	10 (40%)	
12-13	1 (25%)	9(42.9%)	14 (56%)	
14-15	2(50%)	3(14.3%)	1 (4%)	

50 Percentage of Stage I disease, 85.8Percentage of Stage II disease and 96Percentage of Stage III disease had menarche between 10-13 years of age thus indicating that an earlier age of menarche predisposes to higher chances of breast cancer in the patient.

CONCLUSION

50 cases of carcinoma breast were evaluated in the present study and the following conclusions were drawn from the same.

1. Highest incidence of carcinoma breast is seen mostly between the fourth and fifth decade in the study.
2. Early age of menarche has predisposition towards breast cancer.
3. There was no correlation in this study between the early age of first birth and the incidence of breast cancer.
4. A conclusion could not be drawn between parity and breast cancer as similar incidence was seen in all groups.
5. Larger the duration of reproductive period, higher is the chance of breast cancer.
6. As all patients had breast fed their babies, hence no correlation could be drawn from the same.
7. Increased risk is noted with patients with family history with earlier stage of presentation in such patients.
8. As the ratio of patients are almost equal, a relationship could not be established between menstrual status and incidence of breast cancer.
9. Higher cases were noted with Stage II and Stage III disease reflecting the poor education and negligence on the part of the patients.
10. Increase in age resulted in increase in the stage of disease on presentation.

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