Original Article

To Study the Incidence of Recurrence Rate of Carcinoma Breast in Patient Visiting Department of Surgery at Tertiary Care Hospital and Treated with Available Facilities and Modalities at Gajra Raja Medical College, Gwalior, Madhya Pradesh

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ABSTRACT

Introduction: Breast cancer is the most prevalent site-specific cancer in women and the leading cause of cancer-related mortality among women aged 20 to 59. When normal cells in the lobules, ducts, or other breast tissue become damaged and proliferate uncontrollably, breast cancer develops. The aberrant cells multiply and collect rapidly, forming a mass known as a tumor.

Objective: study to assess the incidence of recurrence rate of carcinoma breast in patient visiting Department of Surgery and treated with available facilities and modalities at Gajra Raja Medical College, Gwalior.

Methodology: A Retrospective observational study was conducted in the patients visiting surgery department in GRMC, GWALIOR Districts of MP. Total 50 patients diagnosed with clinical palpable breast lump with FNAC status positive who were admitted in Surgical Ward, Department of General Surgery, G.R.M.C., Gwalior by using SPSS 25.

Result: Recurrence of breast carcinoma was reported by 34% patients only. Whereas 66% patients were reported with no recurrence. Majority of the patients were aged between 45-49 years, i.e. [08(47.06%)], followed by 50-54 years [07(41.18%)] . it was found that out of the total enrolled patients maximum i.e. 46% were detected for Ductal cell carcinoma in situ, followed by 30% patients for Invasive ductal carcinoma and so on.

Conclusion: Findings of our study indicate that, it was observed that despite a higher incidence of recurrence it was reported only in 34% of total enrolled and successfully treated patients. This indicates that breast carcinoma can be managed and treated successfully.

Key Words: *Breast Carcinoma, Recurrence, Incidence, Lobule, Duct and Tumor*

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INTRODUCTION

When normal cells in the lobules, ducts, or other breast tissue become damaged and proliferate uncontrollably, breast cancer develops. The aberrant cells multiply and collect rapidly, forming a mass known as a tumor. If a tumor grows but does not spread to neighboring breast tissue, it is deemed benign and not cancerous. A malignant tumor that invades adjacent tissue and spreads is deemed cancerous.

Due to the fact that it might begin in lobules, ducts, or other tissues, there are numerous forms of breast cancer [1].

Breast cancer accounts for 26% of all newly diagnosed malignancies in females. Breast cancer is responsible for 15% of all cancer-related female deaths [1, 2].

In every country, breast cancer mortality rates have climbed over the previous 60 years [3]. In India, the incidence of breast cancer is growing. It is estimated that approximately one in 22 women in India would develop breast cancer over their lifetime [4].

Its prevalence peaking in the fifth and sixth decades; nevertheless, in the United States, this disease is frequently

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identified a decade earlier [5].

Some mutations, such as p-53, BRCA1 and BRCA2, can cause cancer. These mutations may be inherited or acquired postnatal. Other breast cancer-causing mutations inhibit the P13K/AKT pathway; these mutations aid in 'apoptosis' so that the pathway remains in the on state and cancer cells do not commit suicide [6].

During 2008–2012, the incidence and mortality rates of breast cancer in India increased by 11.54% and 13.82%, respectively, posing a significant challenge [7, 8].

A breast cancer recurrence is breast cancer that has returned after treatment, following a period in which the disease was undetectable. Recurrence can occur months or years after the initial treatment of breast cancer. Depending on its nature, the origin of recurrence may be local, regional, or distant. Estimating the incidence, prevalence, and mortality of BC in the Indian context is complicated by the delayed hospital presentation and diagnosis, the dearth of hospital-based databases and electronic cancer registries, and the lack of interconnected state and national registration systems [9]. The majority of BC incidence data is derived from local studies conducted in a restricted geographical area and limited number of cities.

There is a need to evaluate the clinical presentation pattern, age distribution, and predisposing factors of breast cancer in order to determine the incidence of recurrence of carcinoma breast, determine the efficacy of treatment in case of carcinoma breast through various treatment modalities, and examine the various risk factors associated with breast cancer. Hence we aimed for this study in Madya Pradesh.

OBJECTIVE
To study the incidence of recurrence rate of carcinoma breast in patient visiting Department of Surgery and treated with available facilities and modalities at Gajra Raja Medical College, Gwalior, MP.

MATERIAL ANDMETHODS
A Retrospective observational study was conducted in the patients visiting surgery department in GRMC, GWALIOR Districts of MP. Total 50 patients with documented case of breast carcinoma diagnosed with clinical palpable breast lump with FNAC status positive who were admitted in Surgical Ward, Department of General Surgery, G.R.M.C., Gwalior. After ethical approval from ethical committee this study was conducted on patients who were admitted in surgical wards under all units Department of Surgery, Gajra Raja Medical College, and Gwalior study period from January 2021 to August 2022.

Detailed history was taken, complete clinical examination was done. 50 patients with documented case of breast carcinoma diagnosed with clinical palpable breast lump with FNAC status positive who were admitted in Surgical Ward, conducted during the period of one year January 2021 to August 2022. Study started after the approval from Institutional Ethical Committee. Data were entered into a Microsoft Excel spread sheet and analyzed by SPSS-25 (crosstab analysis) and the **P Value < 0.05 was considered as statistically significant.**

RESULTS
Table 1: Distribution of the Enrolled Patients according to age

AGE DISTRIBUTION (years)	N	%	P-VALUE
35-39	3	6.00%	
40-44	4	8.00%	
45-49	22	44.00%	**X=16.90**
50-54	18	36.00%	
55-59	3	6.00%	**p=0.0020***
Grand Total	50	100.00%	

*****Pearson's Chi-Square**

Table 1 shows the distribution of the study population according Gender.

Majority of the patients were aged between 45-49 years, i.e. [22(44.00%)], followed by 50-54 years [18(36.00%)] and so on along with statistically significant difference among the age distribution of enrolled patients [p=0.0020*].
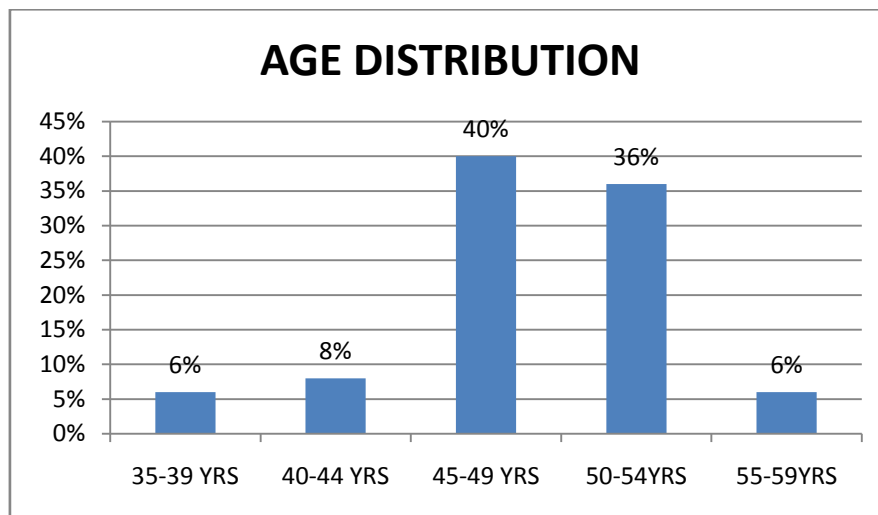
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AGE DISTRIBUTION

Figure 1: Shows the distribution of the study population according Gender

Table 2: Recurrence of breast carcinoma in enrolled patients

Recurrence of Breastcarcinoma	N	%	P-VALUE
Yes	17	34.00%	X=2.627
No	33	66.00%	p=0.1050

*Pearson's Chi-Square

Table 2 shows the distribution of the study population according Recurrence of breast carcinoma.

Recurrence of breast carcinoma was reported by 34% patients only. Whereas 66% patients were reported with no recurrence
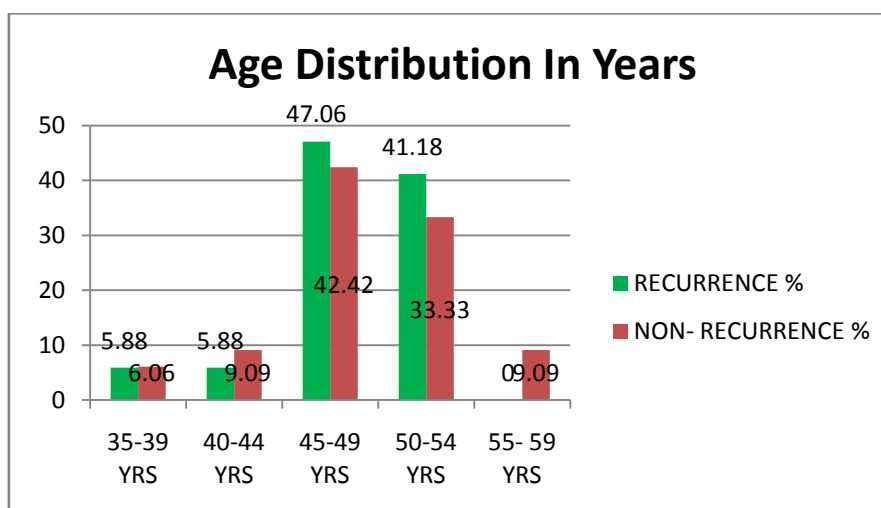
Table 3: Based on the recurrence age distribution status in enrolled patients.

Age distribution (years)	Recurrence [n=17]		Non-recurrence [n=33]		P- value
	N	%	N	%	
35-39	1	5.88%	2	6.06%	
40-44	1	5.88%	3	9.09%	
45-49	8	47.06%	14	42.42%	X=1.937 p=0.7474
50-54	7	41.18%	11	33.33%	
55-59	0	0.00%	3	9.09%	

*Pearson's Chi-Square

Table 3 shows the distribution of the study population Based on the recurrence age distribution status in enrolled patients.

Majority of the patients were aged between 45-49 years, i.e. [08(47.06%)], followed by 50-54 years [07(41.18%)] and so no. Along with statistically, insignificant difference among age distribution of enrolled patients [p=0.7474].

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Figure 3: shows the distribution of the study population Based on the recurrence age distribution status in enrolled patients

Table 4: Pathological Findings FNAC & HPE of total enrolled patients

Pathological Findings FNAC & HPE	N	%	P-value
Invasive lobularcarcinoma	3	6.00%	
Lobular carcinoma in situ	9	18.00%	
Invasive ductal carcinoma	15	30.00%	X=14.06
Ductal Carcinoma In situ	23	46.00%	
Grand Total	**50**	**100.00%**	**p=0.0071***

*Pearson's Chi-Square**

While analyzing the mean findings of Pathological Findings (Fine needle aspiration cytology & histopathology report) it was found that out of the total enrolled patients maximum i.e. 46% were detected for Ductal cell carcinoma in situ, followed by 30% patients for Invasive ductal carcinoma and so on along with statistically significant difference among all the parameters (p=0.0071*).

DISCUSSION

The present study was conducted in the Department of General Surgery, Gajra Raja Medical College, Gwalior. After taking ethical clearance and written informed consent, 50 patients with documented cases of carcinoma breast admitted to the surgical ward under all units were enrolled.

In the current research, recurrence of breast carcinoma was reported by 34% of patients only. At the same time, 66% of patients were reported with no recurrence. Similarly, Wangchinda P. et al. (2016) [10] included 300 women whose breast cancers recurred between 2005 and 2013, 180 of whom had a recurrence within five years of diagnosis and 120 of whom had a recurrence later than five years (median time to reproduction: 45.43 months; range: 4.4–250.3 months).

In the current research, out of a total of 10% of diabetic patients, 17.65% faced recurrence; however, 6.06% not. Further, 41.18% of patients on chemotherapy and 5.88% on Hormonal therapy also met recurrence. Furthermore, 64.71% of obese and 82.35% of patients with chronic inflammatory conditions also reported the recurrence, along with statistically significant differences. Similarly, according to Mathew A et al., 2008 [11], Although increased anthropometric measures such as larger body size and obesity determine breast cancer recurrence risk in India, they do not significantly contribute to the urban–rural differences in breast cancer.

As per the present study, recurrence also depends based on the size of tumours, i.e. 52%, were sized between 2-5 cm, followed by 38% in <2cm and then after only 10% sized >5cm, along with significant difference among all. Even some of the previous authors including Pedersen R. N. et al. (2022) [12], also supported our data. They concluded that recurrences occurred up to 32 years after the initial diagnosis. High lymph node load, large tumour size, and oestrogen receptor-positive tumours enhanced the chance of late recurrence in women with breast cancer. Additionally, similar to our findings according to Pedersen R.N. et al. (2022) [12], also, out of the total enrolled patients, in 20% of patients, only nipple areola was complexed; however, in the remaining 80% of patients, nipple areola was simpler. Further, a statistically significant difference was observed among both groups.

Patients with metastatic breast carcinoma with bony lesions respond to chemotherapy and hormonal therapy and can

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survive. In the current study, out of the total enrolled patients, only (2%) were subjected to chemotherapy; however, the remaining (98%) were not. Further, a statistically significant difference was observed among both groups. Similarly, Zhang N et al., 2011 [13], pooled analysis has demonstrated a substantial change in estrogen receptor (p = .016) and progesterone receptor (p < .001) status before and after chemotherapy. Similarly, Harvey HA 1997 [14], findings suggest that the chemotherapy alters hormonal receptor status in patients receiving neoadjuvant chemotherapy.

In the present study, while analyzing the mean findings of Pathological Findings (Fine needle aspiration cytology & histopathology report), it was found that out of the total enrolled patients, 11.76% invasive lobular carcinoma, 17.65% lobular carcinoma in-situ and 70.59% Invasive ductal carcinoma reported recurrence, along with statistically significant difference among all the parameters, similarly, according to Liu Y et al., 2011 [15], recurrence Scale (CARS) at 2-year follow-up. Of 506 disease-free patients at a 2-year follow-up (mean [S.D.] age, 58 [10] years; 81% White; 34% DCIS), the average FCR score of 2.0 was low. However, 145 (29%) reported moderate-to-high levels of FCR (scores 3.0–6.0). All three models showed that younger Age, stage IIA breast cancer (vs DCIS), lower social support, and elevated anxiety were consistently associated with higher FCR at 2-year follow-up (each P < 0.05; final models R 2 = 0.25–0.32). DCIS patients reported lower FCR than stage IIA patients (each P ≤ 0.01)

In the present study, 29.41% of tumours<2 cm, 52.94% of tumours 2-5 cm, and 17.65% of tumours>5cm reported recurrence, along with insignificant differences among all. Similarly, according to Pedersen R. N. et al. [15], high lymph node load, large tumour size (>5cm), and oestrogen receptor-positive tumours enhanced the chance of late recurrence in women with breast cancer. Such individuals may require extended monitoring, more aggressive therapy, or novel therapeutic techniques.

In the present study, out of the total enrolled patients, 17.65% were I staged tumours, 47.06% were II staged, 5.88% were III staged tumours and 29.41% were IV i.e. final staged tumours reported recurrence, along with insignificant differences among all. Further, 70.59% I stage nodes and 11.76% II stage nodes reported recurrence along with insignificant differences among all. Gnant M. et al. [16], performed a combined analysis of ABCSG-8 and ATAC using the PAM50 risk of recurrence score and intrinsic subtype to identify clinically relevant prognostic subgroups of postmenopausal women with node-positive hormone receptor-positive early-stage breast cancer treated with endocrine therapy.

A PAM50 test is an effective tool for determining treatment for early-stage breast cancer patients with positive lymph nodes. In the present study, out of the total enrolled patients, 30% were subjected to chemotherapy, and 70% were not. Further, a statistically significant difference was observed among both groups. Further, a statistically significant difference was observed among both groups. Gnant M. et al. [16], concluded that the PAM50 ROR score and I.S. could identify subgroups of node-positive patients with a low risk of metastases following endocrine therapy, for whom adjuvant chemotherapy can be omitted.

In the current study, out of all axillary nodes status, the apical node was present in 44% of patients, and the lateral wall node was present in 46%. Whereas the posterior wall node, Medial wall node, and Anterior wall node were absent in 100% of patients. Further, a statistically significant difference (p<0.0001*) was observed amongabsent and present groups for the posterior, medial, and anterior walls. Similarly, according to Yoshimura G et al.[17], on histopathological examinations of 4043 dissected lymph nodes, a long- axis dimension of 10 mm or larger combined with a long-to-short axis ratio of less than 1.6 was the most accurate criterion for predicting lymph node metastases. On MRI, eccentric cortical hypertrophy was seen in only metastatic axillae. When these morphologic features were used as criteria for malignancy, MRI had a sensitivity of 79%, a specificity of 93%, and an accuracy of 88%. In 16 of 17 false-negative axillae, MRI showed normally sized lymph nodes (<10 mm).

In the current study, while analyzing the tumour (T), nodes (N), and metastases (M) staging, it was observed that maximum stage/grade IV of the tumour was reported by 20% of patients only, followed by III stage/grade was reported by 4% patients only and so on, along with statistically s Significant difference among all. Li Y. et al. [18], reported a rise in early-stage breast cancer and a decrease in lymph node metastases (P = 0.004 and P = 0.007, respectively).

CONCLUSION

Findings of our study indicate that, it was observed that despite a higher incidence of recurrence it was reported only in 34% of total enrolled and successfully treated patients. This indicates that breast carcinoma can be managed and treated successfully.

It was observed that despite a higher incidence of recurrence it was reported only in 34% of total enrolled and successfully treated patients. This indicates that breast carcinoma can be managed and treated successfully. Further, mostly in females of 45-49 years of age group, the incidence of recurrence rate of carcinoma breast is higher.

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KEY MESSAGES

The present study reveals information regarding the incidence and recurrence of Breast Carcinoma in patients.

Further, longitudinal studies should be conducted assessing similar outcome rate trends of local recurrence and regional recurrence in breast cancer patients, as well as the outcomes of these patients according to their molecular subtypes.

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