

Role of Breast Conservation Surgery in Patients with Locally Advanced Breast Carcinoma after Neoadjuvant Chemoradiotherapy

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Abstract: **Background:** Locally advanced breast cancer (LABC) constitutes more than 50 to 70% of the patients presenting for treatment. Today treatment of LABC requires a combination of systemic and local/regional therapies. The most common approach for treating Locally Advanced Breast Carcinoma in developed countries consists of neoadjuvant chemotherapy with anthracyclines and taxanes followed by surgery and radiation therapy; hormonal treatment is added for receptor-positive disease, and patients with Her2neu-positive disease receive trastuzumab therapy. **Objective:** To evaluate, compare and study the role of Breast conservation after neoadjuvant chemoradiotherapy in terms of Margin infiltration of excised specimen, Ipsilateral reoccurrence, Patient satisfaction and Survival rate. **Material & Method:** Prospective study performed from August 2019 to August 2020 in the department of General Surgery and Radiotherapy in SN Medical College, Agra on patients with locally advanced breast carcinoma operated with Breast conservation after neoadjuvant chemotherapy. Total numbers of patients included were 60. Clinical assessment of all the cases was carried out and Tissue obtained from breast biopsy as well as postoperative specimen was sent to pathology department for H and E staining to assess the histological tumor type and grade in accordance with Modified Bloom Richardson histological grading system and immunohistochemistry. Statistical analysis was done and P values <0.05 were considered significant. **Conclusion:** Breast conservation surgery is safe and effective alternative to mastectomy in patients with locally advanced breast carcinoma for patients treated with neoadjuvant chemotherapy.

Keywords: Breast Conservation Surgery, Locally advanced Breast Carcinoma, Neoadjuvant Chemotherapy

1. Introduction

Worldwide breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women (after lung cancer).^{1, 2} Presently, 75,000 new cases occur in Indian women every year. Locally advanced breast cancer (LABC) constitutes more than 50 to 70% of the patients presenting for treatment.³ LABC is a heterogeneous clinical entity that includes patients with large (>5 cm) primary breast tumors or T4 tumors with chest wall involvement, skin edema, including peau d'orange or ulceration of the skin; satellite nodules; confined to the same breast; or inflammatory carcinoma and/or extensive clinical lymph node involvement, as defined by the N2 and N3 categories from the American Joint Committee on Cancer TNM classification system.^{4,5} Today treatment of LABC requires a combination of systemic and local/regional therapies. The most common approach for treating Locally Advanced Breast Carcinoma in developed countries consists of neoadjuvant chemotherapy with anthracyclines and taxanes followed by surgery and radiation therapy; hormonal treatment is added for receptor-positive disease, and patients with Her2neu-positive disease receive trastuzumab therapy.

2. Materials and Method

Prospective study performed from August 2019 to August 2020 in the department of General Surgery and Radiotherapy in SN Medical College, Agra on patients with locally advanced breast carcinoma operated with Breast conservation after neo- adjuvant chemotherapy

Inclusion Criteria

- Smaller, monocentric tumors;
- Younger age;

- Localization of tumor;
- Patient compliance.
- Patient is fit for chemotherapy

Exclusion Criteria

- Local widespread disease
- Multicentricity
- Diffuse(malignant) micro-calcifications
- Ior II trimester;
- Already irradiated thoracic wall
- Positive family history of breast carcinoma
- Bilateral tumor
- Metastatic disease

All the patients who came to surgery and radiotherapy department during the study period meeting inclusion criteria and gave informed consent were selected for study.

Clinical assessment of all the cases was carried out and the clinical details like age, family history, menopausal status, tumor size, lymph node status and stage by TNM staging system was recorded. Tissue obtained from breast biopsy as well as postoperative specimen was sent to pathology department for H and E staining to assess the histological tumor type and grade in accordance with Modified Bloom Richardson histological grading system and immunohistochemistry.

Statistical analysis was done by using sensitivity, specificity along with their 95% confidence interval for individual marker as well as relevant profiles. P values <0.05 were considered significant.

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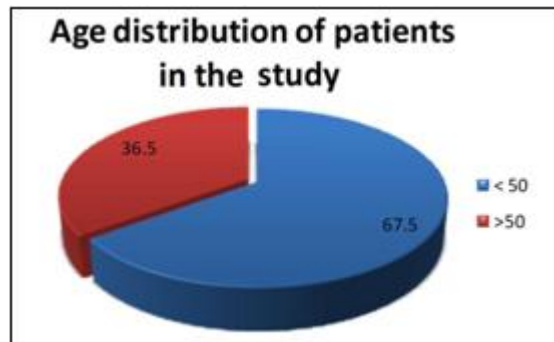
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3. Results & Discussion

A total number of patients in the study are 80. Age distribution of patients is displayed in Table 1 & Graph1. Mean age was 45.2 years.

Table 1: Age Distribution

Age	Number	Percentage
<50	54	67.5
>50	26	36.5
Mean Age		45.2

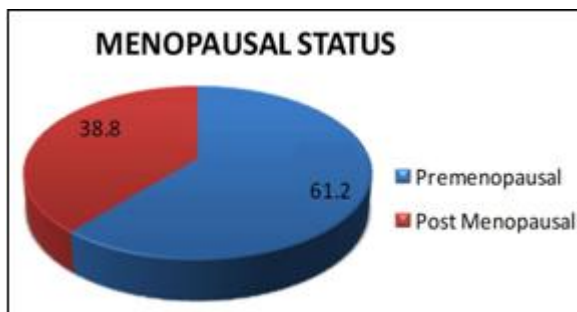


Graph 1

The 49(61.2%) patients in our study were premenopausal and 31 (38.8%) patients were postmenopausal.

Table 2: Menopausal Status of Patients included in the study

Menopausal Status	Number	Percentage
Pre Menopausal	49	61.2
Post Menopausal	31	38.8

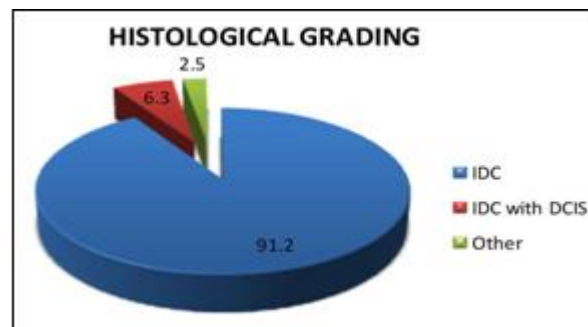


Graph 2: Menopausal Status

The histological grading of breast carcinoma in our study were 73 (91.2%) patients had invasive ductal carcinoma, 5 (6.2%) patients had invasive ductal carcinoma with ductal carcinoma in situ and 2 (2.6%) patients had other grading.

Table 3: Histological Grade of Tumor

Histological grading	No.	%
IDC	73	91.2
IDC with DCIS	5	6.3
Other	2	2.5

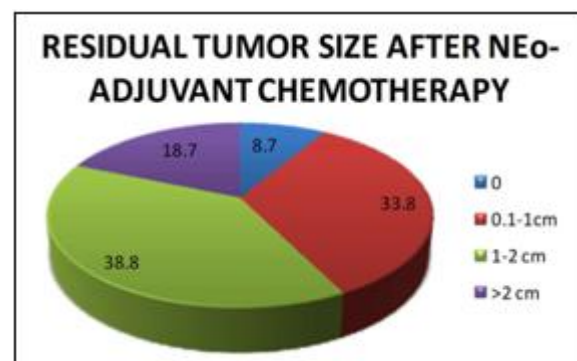


Graph 3: Histological Grading

The residual tumor size was 0 in 7 (8.7%) patients having pathological complete response, 27 (33.8%) patients had residual tumor size of 0.1-1 cm, 31 (38.8%) patients had residual tumor size of 1-2 cm and 15 (18.7%) patients had residual tumor size of >2 cm.

Table 4: Residual Tumor Size after Neo-Adjuvant Chemotherapy

Size	Number	%
0	7	8.7
0.1-1 cm	27	33.8
1-2 cm	31	38.8
>2 cm	15	18.7

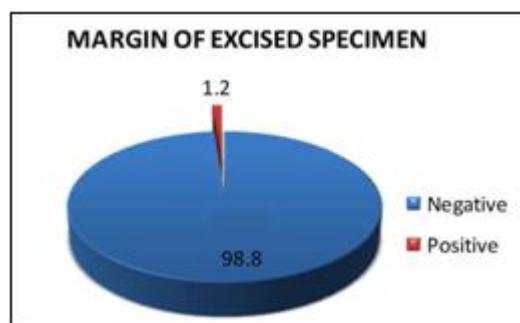


Graph 4: Residual Tumor Size After Neo Adjuvant Chemotherapy

Margin of excised specimen were found negative in 79 (98.8%) of patients and margin of excised specimen were positive in 1 patient.

Table 5: Margin of excised specimen free from tumor

Margin of excised specimen	No.	%
Negative	79	98.8
Positive	1	1.2

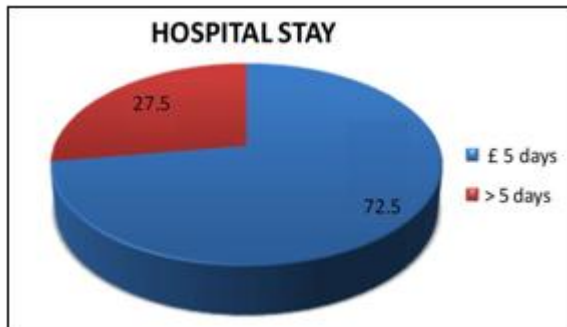


Graph 5: Margin of Excised Specimen

The hospital stay of patients treated with breast conservation therapy with neoadjuvant chemotherapy was ≤5 days in 58 (72.5%) of patients and >5 days in 22 (27.5%) patients.

Table 6: Hospital Stay

Hospital Stay	No.	%
≤ 5 days	58	72.5
> 5 days	22	27.5

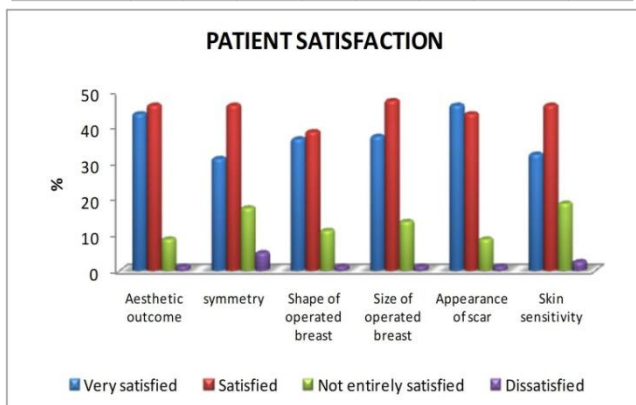


Graph 6: Hospital Stay

In our study the patients satisfaction in aspect of aesthetic outcome was 89% of patients were satisfied or very satisfied, 7(8.8%) patients were not entirely satisfied and 1 (1.2%) patient was dissatisfied. The symmetry of breast, 25 (31.3%) patients were very satisfied, 37 (46.2%) patients were satisfied, 14 (17.5%) patients were not entirely satisfied and 4 (5%) patients were dissatisfied. In aspect of shape of operated breast 60 (75%) of patients were very satisfied or satisfied, 9(11.2%) patient were not entirely satisfied and 1 (1.2%) patient was dissatisfied.

Table 7: Patient Satisfaction in Group-1 Patients

	Very satisfied		Satisfied		Not entirely satisfied		Dissatisfied	
	No.	%	No.	%	No.	%	No.	%
Aesthetic outcome	35	43.8	37	46.2	7	8.8	1	1.2
Symmetry	25	31.3	37	46.2	14	17.5	4	5
Shape of operated breast	29	36.8	31	38.8	9	11.2	1	1.2
Size of operated breast	30	37.5	38	47.5	11	13.7	1	1.2
Appearance of scar	37	46.2	35	43.8	7	8.8	1	1.2
Skin sensitivity	26	32.5	37	46.2	15	18.8	2	2.5

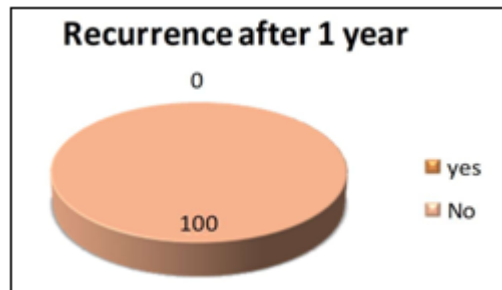


Graph 7: Patient Satisfaction

No recurrence is seen in any of patients of breast conservation surgery after neoadjuvant chemotherapy and postoperative radiotherapy after follow up of 1 year.

Table 8: Recurrence after 1 Year Follow Up

Recurrence after 1 year	No	%
Yes	0	0
No	80	100



Graph 8: Recurrence after 1 Year

4. Conclusion

Breast conservation surgery is safe and effective alternative to mastectomy in patients with locally advanced breast carcinoma for patients treated with neoadjuvant chemotherapy. Breast conservation surgery has lower rates of margin infiltration of excised specimen. Patients have good satisfaction rates after breast conservation surgery. The patients have reduced lower recurrence rate for patients treated with neoadjuvant chemotherapy. The long-term prognosis of patient with breast conservation surgery treated with neoadjuvant chemotherapy requires further follow-up and needs further evaluation.

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