

Original article:

Study of different types of treatment modalities in Breast Carcinoma

¹Dr Shiwangi Kashyap , ²Dr Aashay Shah*

¹Department of Surgery, Rural Medical College, PIMS (DU), Loni

²Department of Surgery , D Y Patil Medical College , Navi Mumbai

Corresponding author*

Abstract

Background and objectives: Breast cancer is one of the most common malignancies in female and in developing countries majority of them present in locally advanced stages. Patients presenting with LABC constitute a diverse group for which a variety of treatment modalities have been instituted with co-ordinated treatment planning among the medical oncologist, surgical oncologist and radiation oncologist. The study is conducted to know the incidence, age distribution, common modes of presentation. To study the multimodality management including neoadjuvant chemotherapy, surgery and adjuvant therapies.

Materials and methods: This was a prospective study of 50 patients presenting with Stage III and inflammatory breast cancer to Pravara institute of medical sciences, Department of general surgery from January 2017 to January 2018.

Results: 44% of the breast cancer cases presented in locally advanced stages. 46% of these presented in stage IIIA, 48% in stage IIIB, 4% in stage IIIC and 2% with inflammatory breast cancer. 34% of cases presented in fourth decade. 72.9% of the cases showed clinical partial response to neoadjuvant chemotherapy. 35 out of 38 inoperable cases were converted into operable cases. 60% cases were ER/PR receptor positive.

Conclusions: Chemotherapy regimen are well tolerated. Radiotherapy is effective in preventing local recurrence.

Key words : Locally advanced breast cancer, Neo adjuvant chemotherapy, Radiotherapy.

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 Higher incidence in developing countries due to lack of active screening and early detection programmes, low awareness of breast cancer, poor access to health care due to poverty and cultural issues are other contributory factors for late presentation. The Locally advanced breast cancer (LABC) is characterized by varying clinical presentations such as presence of a large primary tumour (>5 cm), associated with or without skin or chest-wall involvement or with fixed (matted) axillary lymph nodes or with disease spread to the ipsilateral internal mammary or supraclavicular nodes in the absence of any evidence of distant metastases. These are tumours belonging to stages IIIA, IIIB, IIIC and inflammatory breast cancer.

Although the clinical features at presentation and prognosis among women with LABC vary, there are two common problems in the treatment. Achieving local control and prolonging survival by preventing or delaying distant metastasis.

Today treatment of LABC requires a combination of systemic and local/regional therapies. The most common approach for treating LABC 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. Most patients have good clinical responses to induction chemotherapy in both the primary tumour and regional lymph nodes.^{4,5}

Material and Methods

The present study was a descriptive hospital based study conducted in dept of general surgery PMT, Loni during the period of January 2017 to January 2018.

Inclusion criteria.

All patients presenting in PMT, LONI with stage IIIA, IIIB, IIIC and inflammatory carcinoma were included in the study.

Exclusion criteria.

Patients who were clinically diagnosed as having locally advanced breast cancer (i.e IIIA, IIIB, IIIC and inflammatory carcinoma) but on investigations found to have distant metastasis were excluded.

An attempt is made in this study to evaluate the various modalities of treatment.

Results:

The age of the presenting patients ranged from 27 to 65 years .The highest number of patients were in age group of 41-50 years age group with 17 (34%), followed by 31-40 years age group with 13(26%). The mean age of patients was 45.1 years .

24 Of the 50 cases studies 23 (46%) were of stage IIIA, 24 (48%) are stage IIIB, 2 cases (4%) are stage IIIC and 1 case (2%) is inflammatory carcinoma.

A total of 38 (76%) cases were considered to be inoperable. These include 24 cases of IIIB, 2 IIIC and one inflammatory cancer with 9 cases of IIIA which had fixed or matted nodes.

12 (24%) patients presenting in operable stages (T3N1) were treated with MRM and Adjuvant chemotherapy. 7 cases were later subjected to radiotherapy. 38(76%) cases presenting in inoperable stages were subjected to NACT and 35(92%) that were converted into operable stages were subjected to MRM followed by completion of chemotherapy and radio therapy.

TABLE 1 : SEQUENCING OF TREATMENT

SEQUENCING	NUMBER OF CASES	PERCENTAGE
NC+S+C+R	33	66%
NC+S+C	2	4%
NC+R	3	6%

S+C+R	7	14%
S+C	5	10%

Three standard regimen were used in the study. CMF was used the most in 26 (52%) of the patients. AC regimen was used in 24 (48%).

TABLE 2 : CHEMOTHERAPY REGIMEN

REGIMEN	NUMBER OF PATIENTS	PERCENTAGE
CMF	26	52%
AC	24	48%

Response to neo adjuvant chemotherapy was assessed by calculating the percentage decrease in the volume of the tumour. The response is classified according to the stage and depicted in the table and graph.

TABLE 3 : RESPONSE TO NEOADJUVANT CHEMOTHERAPY

Clinical Response		IIIA	IIIB	IIIC
Complete(cCR)	100%	3	2	-
Partial (cPR)	91-99%	2	1	-
	81-90%	1	5	1
	71-80%	3	8	-
	61-70%	-	2	1
	51-60%	-	1	-
Stable disease (SD)	1-50%	2	2	-
	0%	-	3	-

One case of inflammatory carcinoma had no response to therapy.

Discussion:

In our study of the 38 patients who received neo adjuvant chemotherapy, 5 (13.2%) patients had complete clinical response (cCR), 25 (65.8%) patients had clinical partial response (pCR). 8 (21%) had stable disease. In the present study the inoperable tumours were treated with neoadjuvant chemotherapy. A majority of these cases the treatment was sequenced as neoadjuvant chemotherapy followed by surgery and completion of the remaining cycles of chemotherapy if any. This was followed by consolidation radiotherapy. This compares well with studies conducted by various authors who treated the patients with the same sequence and is also in sync with the current guidelines. The other series following similar sequences are mentioned in the table below. The operable cases underwent surgery followed by adjuvant chemotherapy and radiotherapy in our study as in study of Ioprinzi et al.⁶

The cases which presented in operable stages are subjected to neoadjuvant chemotherapy to downstage the tumour and facilitate surgery, for local control of the disease. The patients undergoing surgery are then advised radiotherapy to prevent local recurrence.

The toxicities of chemotherapy noted in our study are compared with study conducted by Sambasivaiah Kurapathy⁷ et al. In both the studies overall the toxicity rates are higher in anthracycline based regimen like AC than in CMF. Most common adverse effect noted is alopecia followed by emesis and anemia in AC regimen and anemia and mucositis in CMF regimen. Neutropenia was noted in only one patient on AC regimen. The rates of toxicity are comparable to the above mentioned study.

Majority of the patients, 35 (70%) of the patients were doing well at the end of the study. The most distressing outcome was development of distant metastasis in 4 (8%) of the patients. These cases included one inflammatory carcinoma and other three were stage IIIB two of which had not responded to NACT and had remained inoperable. Local recurrence was seen in 3(6%) of the patients. Two of these cases were of stage IIIA and was not on radiotherapy. One case belonged to stage IIIB and had completed radiotherapy.

8(16%) of the cases were lost to follow up.

Conclusions:

Chemotherapy regimen are well tolerated. Radiotherapy is effective in preventing local recurrence.

References:

1. Dumitrescu RG, Cotarla I. Understanding breast cancer risk-where do we stand in 2005?. *J Cell Mol Med* 2005;9: 208-21.
2. Chandra AB. Problems and prospects of cancer of the breast in India. *J Indian Med Assoc* 1979;72: 43-5.
3. Chopra R. The Indian Scene. *Journal of Clinical Oncology* 2001;19: S106-11.
4. Halsted WS. The results of radical operation for the cure of cancer of the breast. *Trans Am Surg Assoc* 1907; 25:61.
5. Martin HE, Ellis EB. Biopsy by needle procedure and aspiration. *Ann Surg* 92:169-181.
6. Warren SL. Roentgenologic study of the breast. *AJR Am J Roentgenol* 1930; 24:113-124

7. Baclesse F. Roentgen therapy alone in cancer of the breast. *Acta Un Int Control* , 2007 , 11-17
8. William J Larsen, *Human Embryology*, 3rd edition, Edinburgh, Churchill Livingstone, 2001; 14: 474-475.
9. Peter L Williams, Lawrence, Martin et al., *Gray's Anatomy*, 38th edition, Edinburgh, Churchill Livingstone, 1999; 5: 417-424.