A STUDY OF LOCALLY ADVANCED CARCINOMA OF BREAST

Prabhakar Jenna[1], Sushma Jagadev[2]

[1]Associate Professor, Department of Surgery, Guntur Medical College, Government General Hospital, Guntur, Andhra Pradesh.
[2]Assistant Professor, Department of Pathology, Andhra Medical College, Visakhapatnam, Andhra Pradesh.

ABSTRACT

BACKGROUND

Worldwide, breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women. Locally advanced breast cancer constitutes more than 50-70% of the patients presenting for treatment has two common problems in 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 aim of the study is to study the clinicopathological presentation, age distribution and various modes of management of locally advanced breast carcinoma. Worldwide breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women. Locally advanced breast cancer constitutes more than 50-70% of the patients presenting treatment.

MATERIALS AND METHODS

The present study includes 50 patients who attended Department of General Surgery for a period of three years.

RESULTS

The patients were regularly followed up and at the end of the study 35 (70%) of the patients were doing well. 4(8%) of the patients developed distant metastasis and 3 (6%) of the patients developing local recurrence. 8 (16%) of the patients were lost follow up.

CONCLUSION

About half of the cases presenting with breast cancer are in locally advanced stages. Multimodality therapy is the effective treatment of locally advanced carcinoma of breast. Breast cancer management is a challenge and improvement in therapies are needed for disease-free interval and overall survival period.

KEYWORDS

Locally Advanced Breast Cancer, Modified Radical Mastectomy, Neoadjuvant Chemotherapy, Quadrantectomy Axillary Dissection Radiotherapy.

HOW TO CITE THIS ARTICLE: Jenna P, Jagadev S. A study of locally advanced carcinoma of breast. J. Evid. Based Med. Healthc. 2017; 4(68), 4093-4096. DOI: 10.18410/jebmh/2017/815

BACKGROUND

Worldwide, breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women. Locally advanced breast cancer constitutes more than 50-70% of the patients presenting for treatment has two common problems in 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.

Financial or Other, Competing Interest: None.
Submission 12-07-2017, Peer Review 04-08-2017,
Acceptance 09-08-2017, Published 24-08-2017.
Corresponding Author:
Dr. Prabhakar Jenna,
Flat No. 302, ELRS Residency, Budhavarapu Gardens,
Visakhapatnam-2, Andhra Pradesh, India.
E-mail: drpjena@yahoo.com
DOI: 10.18410/jebmh/2017/815

MATERIALS AND METHODS

The present study includes 50 patients who attended Department of general surgery during period of November 2013 to October 2016.

Inclusion Criteria

All patients presenting in Guntur Medical College, Guntur, 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, but on investigations found to have distant metastasis were excluded.

Diagnosis was made by FNAC, investigative profile available and accessible in the hospital were made use of.

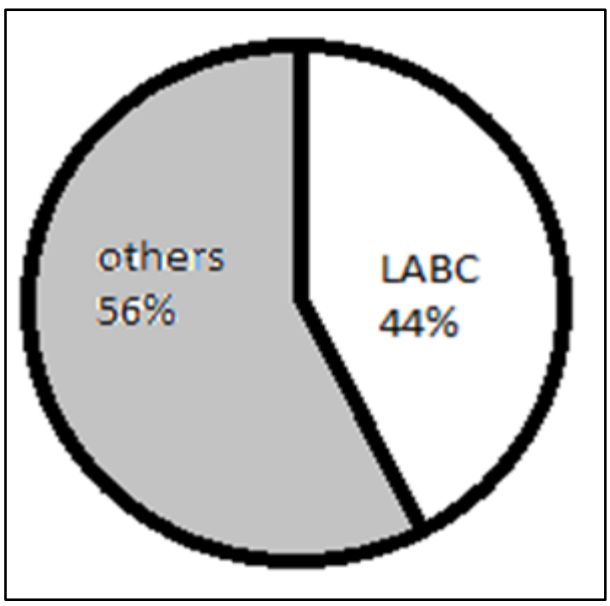
Investigations to rule out metastasis were obtained. USG abdomen and pelvis, LFT, chest x-ray and skeletal x-rays were done.

The multimodality treatment approach of LABC commenced in majority of cases with neoadjuvant chemotherapy followed by local therapy in the form of MRM (Auchincloss modification).

In certain cases of stage IIIA disease considered operable at presentation (stage T3N1) treatment is initiated with local therapy, i.e. modified radical mastectomy followed by adjuvant chemotherapy with standard chemotherapy regimen.

The response to Neoadjuvant Chemotherapy (NACT) was studied by serial clinical examination noting the regression in the size of the lump (or ulcer) and change in the lymphnode status of axilla.

Observation-



Graph 1. Proportion of LABC Cases

Age Group	Number of Patients	Percentage
21-30 yrs.	6	12%
31-40 yrs.	13	26%
41-50 yrs.	17	34%
51-60 yrs.	9	18%
>60 yrs.	5	10%

Table 2. Age Distribution

Tumour Size	Number of Patients	Percentage
<5cms	7	14.2%
5-8cms	37	75.5%
8-10 cms	4	8.2%
>10cms	1	2%

Table 3. Tumour Size

Fixity	Feature	No. of Patients	Percentage
Skin	Peaud'orange	12	24%
	Ulcer	8	16%
	Satellite nodule	4	8%
Chest wall		5	10%

Table 4. Fixity to Skin and Chest Wall

Lymph Node Status	No. of Patients	Percentage
N1	26	52%
N2	22	44%
N3	2	4%

Table 5. Lymph Node Status

Group Stage	TNM Stage	Number of Patients	Number of Patients	Percentage
IIIA	T3N1M0	12	23	46%
	T3N2M0	10		
	T2N2	1		
IIIB	T4a N1 M0	1	24	48%
	T4a N2 M0	4		
	T4b N1 M0	13		
	T4b N2 M0	6		
IIIC	T3N3M0	2	2	4%
Inflammatory CA	T4d	1	1	2%

Table 6. Stage of Disease

Operability	Number	Percentage
Operable	12	24%
Inoperable	38	76%

Table 7. Proportion of Inoperable Cases

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%

Table 8. Sequencing of Treatment

Regimen	Number of Patients	Percentage
CMF	26	52%
AC	24	48%

Table 9. Chemotherapy Regimen

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

Table 10. Response to Neoadjuvant Chemotherapy

Complication	No. of Patients	Percentage
Seroma	4	8.5%
Oedema of arm	4	8.5%
Wound infection	3	6.3%
Wound dehiscence	2	4.2%

Table 11. Complications of Surgery

Toxicity	CMF		AC	
	Number	Percentage	Number	Percentage
Alopecia	10	38.46%	20	83.33%
Anaemia	5	19.2%	6	25%
Mucositis	4	15.4%	3	12.5%
Nausea	1	3.8%	5	20.8%
Emesis	3	11.5%	9	37.5%

Fatigue	2	7.7%	4	16.6%
Neutropenia	0	0%	1	4.1%

Table 12. Chemotherapy Toxicity

RESULTS

The patients were regularly followed up and at the end of the study, out of 50 patients,35 (70%) patients were doing well without any recurrence or symptoms. 4(8%) patients developed distant metastasis and 3 (6%) patients developed local recurrence. 8 (16%) patients were lost for follow up.

Locally Advanced Breast Cancer (LABC) continues to be a significant problem in the United States and a common breast cancer presentation worldwide. LABC generally is defined by bulky primary chest wall tumours and/or extensive adenopathy. This includes patients with T3 (5 cm) or T4 tumours (chest wall fixation or skin ulceration and/or satellitosis) and N2/N3 disease (matted axillary and/or internal mammary metastases).[1] Of note, recent studies demonstrate that prolonged survival can be achieved in patients with metastatic disease limited to the supraclavicular nodes after appropriate multimodality breast cancer treatment.[1,2] As a result, the sixth edition of the American Joint Committee on Cancer (AJCC) staging system now includes isolated supraclavicular metastases in the stage III/LABC disease category.[3] According to the American College of Surgeons National Cancer Database, approximately 6% of breast cancers in the United States present as stage III breast cancer disease.[4] Five-year survival for stage III breast cancer is approximately 50% compared with 87% for stage I. Surgeons historically have been at the forefront of investigating LABC treatment. Haagensen and Stout[5] at Columbia University provided early data regarding the dismal results of radical mastectomy alone as treatment for LABC over 60 years ago reporting 5-year local recurrence and survival rates of 46% and 6%, respectively. This experience led to the definition of inoperable LABC when patients presented with extensive breast skin oedema or satellitosis, intercostal/parasternal nodules, arm oedema, supraclavicular metastases or inflammatory breast cancer. In contrast, grave local signs of LABC were poor prognostic features, but not contraindications to resection. These included ulceration, limited skin oedema, fixation to the pectoralis muscle and bulky axillary lymphadenopathy.

Therapeutic doses of chest wall radiation were similarly inadequate in controlling LABC. Studies from the 1970s and 1980s by the Joint Centre for Radiation Therapy, Guy's Hospital and the Mallinckrodt Institute of Radiology, all revealed excessively high failure rates, with 5-year local recurrence rates ranging from 46% to 72% and survival rates of 16% to 30%.[6-8] Combined treatment with radiation plus surgery was also attempted in this era,[9-11] but yielded no significant improvement in disease control. Preoperative chemotherapy protocols (also known as neoadjuvant or induction chemotherapy) revolutionised LABC care. This approach is now standard for patients with bulky breast and/or axillary disease. Early concerns regarding this approach were based on the potentially negative effects of preoperative chemotherapy on surgical complication rates, the prognostic value of the axillary staging and overall survival after delayed surgery. Clinical investigations reported during the 1980s and 1990s addressed and alleviated these concerns.

Comparable operative morbidity was demonstrated in a study of nearly 200 LABC patients treated with mastectomy, approximately half of whom received preoperative chemotherapy; neoadjuvant patients actually had a lower rate of postoperative seroma formation.[12]Danforth and colleagues[13]similarly reported that preoperative chemotherapy neither adversely affects surgical complication rates nor delays postoperative treatment. Most patients are ready for surgery 3 to 4 weeks after the last chemotherapy cycle, when absolute neutrophil and platelet counts are greater than 1500 and 100,000, respectively. The prognostic value of axillary staging in LABC patients that have received neoadjuvant chemotherapy followed by axillary lymph node dissection was confirmed by McCready and colleagues.[14]

CONCLUSION

About half of the cases presenting with breast cancer are in locally advanced stages. Lump in the breast is the most common symptom, upper outer quadrant being its most common location. Highest number of cases presented in 5th decade, followed by 4th decade indicating the presentation is a decade earlier in Indian patients compared to the west. Fixity to skin was seen in about 48% of the cases and was the most common cause of inoperability. Only a quarter of the cases were operable, rest inoperable. Patients administered NACT showed good response with 13.2% and 65.8% of the patients showing clinically complete and partial response, respectively.92% of inoperable tumours became operable confirming that NACT is an effective method of downstaging the tumour. Chemotherapy was well tolerated in most patients, alopecia being the most common adverse effect followed by anaemia and emesis. Surgical complications were seen in less than 30% of the cases. Hormone receptor positivity was seen in 60% of the patients and tamoxifen was advised in hormone receptor positive patients. Infiltrating ductal carcinoma is the common histological variant seen.

Multimodality therapy is the effective treatment of locally advanced carcinoma of breast, but distant metastasis seen in 4 patients and local recurrence in 3 patients show that management is a challenge and improvement in therapies are needed for disease-free interval and overall survival period.

REFERENCES

[1] Dumitrescu RG, Cotarla I. Understanding breast cancer risk-where do we stand in 2005?J Cell Mol Med 2005;9(1):208-221.

[2] Chandra AB. Problems and prospects of cancer of the breast in India. J Indian Med Assoc 1979;72(2):43-45.

[3] Chopra R. The Indian scene. J ClinOncol 2001;19(18 Suppl):106-111.
[4] Kuerer HM, Newman LA, Smith TL, et al. Clinical course of breast cancer patients with complete pathologic primary tumor and axillary lymph node response to doxorubicin-based neoadjuvant chemotherapy. J ClinOncol 1999;17(2):460-469.
[5] Singletary SE, McNeese MD, Hortobagyi GN. Feasibility of breast-conservation surgery after induction chemotherapy for locally advanced breast carcinoma. Cancer 1992;69(11):2849-2852.
[6] Scholl SM, Fourquet A, Asselain B, et al. Neoadjuvant versus adjuvant chemotherapy in premenopausal patients with tumours considered too large for breast-conserving surgery: preliminary results of a randomised trial: S6. Eur J Cancer 1994;30A(5):645-652.
[7] Scholl SM, Pierga JY, Asselain B, et al. Breast tumour response to primary chemotherapy predicts local and distant control as well as survival. Eur J Cancer 1995;31A(12):1969-1975.
[8] Recht A, Edge SB, Solin LJ, et al. Postmastectomy radiotherapy: clinical practice guidelines of the American society of clinical oncology. J ClinOncol 2001;19(5):1539-1569.
[9] Mamounas E. Preliminary results of the NSABP B-27 trial. San Antonio, TX: Presented at the San Antonio Breast Cancer Symposium 2001.
[10] Green M, Buzdar AU. Results from a prospective trial of neoadjuvant paclitaxel and doxorubicin for breast cancer. Orlando, FL: presented at the American Society of Clinical Oncology Symposium 2002.
[11] Smith IC, Heys SD, Hutcheon AW, et al. Neoadjuvant chemotherapy in breast cancer: significantly enhanced response with docetaxel. J ClinOncol 2002;20(6):1456-1466.
[12] Heys SD, Hutcheon AW, Sarkar TK, et al. Neoadjuvant docetaxel in breast cancer: 3-year survival results from the Aberdeen trial. Clin Breast Cancer 2002;3(Suppl 2):69-74.
[13] Dixon JM, Anderson TJ, Miller WR. Neoadjuvant endocrinetherapy of breastcancer: a surgical perspective. Eur J Cancer 2002;38(17):2214-2221.
[14] Ellis MJ, Coop A, Singh B, et al. Letrozole is more effective neoadjuvant endocrine therapy than tamoxifen for ErbB-1 and/or ErbB-2-positive, estrogen receptor-positive primary breast cancer: evidence from a phase III randomized trial. J ClinOncol 2001;19(18):3808-3816.