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Original Artical

Surgical Management of Locally Advanced Breast Carcinoma Following Neoadjuvant Chemotherapy

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Abstract

Background: Locally advanced breast cancer is still a common form of presentation of breast cancer in developing countries like Bangladesh. Large number of studies and many randomized trials has been done in women with LABC in order to improve the therapeutic decisions and also the local control and survival.

Objectives: To evaluate the different surgical modalities that patients received after neoadjuvant chemotherapy for LABC.

Methodology: This is a prospective observational study conducted among admitted patients having locally advanced breast carcinoma following neoadjuvant chemotherapy from December 2018 to December 2019.

Result: Demographic features showed that, maximum patients age range was 41-50 years, mean age was 43.66 years. Out of 38 cases 17(44.74%)cases were ER positive, 11(28.95%) case were progesterone positive, 4(10.53%)cases were her-2 receptor positive and 17(44.74%)cases were triple negative breast cancer(TNBC). Lymphovascular invasion was present in 39.47% cases. Commonly performed surgical procedures were modified radical mastectomy (89.47%), breast conserving surgery with sentinel lymphnode biopsy (5.26%), LD flap coverage (2.63%), toilet mastectomy (2.63%). After mastectomy only 2(5.26%) patient showed margin involved and one patient developed marginal necrosis.

Conclusions: Modified radical mastectomy still remains the standard of care in the surgical management of LABC in this study.

Keywords: Locally advanced breast cancer, Modified radical mastectomy, Neoadjuvant chemotherapy

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Introduction

Locally advanced breast cancer is a very common clinical scenario especially in developing countries (30-60%) possibly due to various factors like lack of education and poor socio-economic status.[1] 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.[2]

Locally advanced breast cancer present us as stage III disease. After clinical and histological diagnosis a tumor board is arranged. Members of board are general surgeons, plastic surgeons, oncologist, pathologist, radiologist and sometimes thoracic surgeons. If LABC is inoperable according to decision of MDT board, decision is made to downstage the disease by neoadjuvant chemotherapy. The aim of this study is to observe the surgical management and early outcome of LABC following neoadjuvant chemotherapy. The most common method for breast cancer therapy, including LABC are surgery, radiotherapy, chemotherapy, immunotherapy, hormone therapy. All these procedures are performed to control the loco-regional disease and to eliminate distant metastasis. Breast conserving surgery was prefered upto T_3 state and patient desire. Toilet mastectomy were performed in ulcerated and fungated breast cancers and rest of the patients were planned for modified radical mastectomy.

Early complications are defined here as complications occurring within 30 days after surgery. It is documented that early wound complications after modified radical mastectomy include wound infections, seromas, lymphoedema, chronic pain, flap necrosis and hematomas. Based on different conducted surveys, a wide range of 0.8-26% has been reported as the incidence rate of the surgical site complications after the breast surgeries.[10]

Methods

This is a prospective observational study carried out in the Department of Surgery of Dhaka Medical College Hospital, Dhaka over a period of 1 year from December 2018 to December 2019. 38 patients having locally advanced carcinoma of breast following neoadjuvant chemotherapy on the basis of prior clinical evaluation and histopathological diagnosis were included in the study. Data were collected from an especially designed case recording proforma pertaining to patients particulars, examinations, diagnosis. Early postoperative complications were noted within 1 month of followup.

Result

It was observed that majority of cases i.e. 16 (42.10%) belonged to the age group 41-50 years, followed by 10 (26.32%) cases in the age group 31-40 years. The mean age was found 43.66 years.

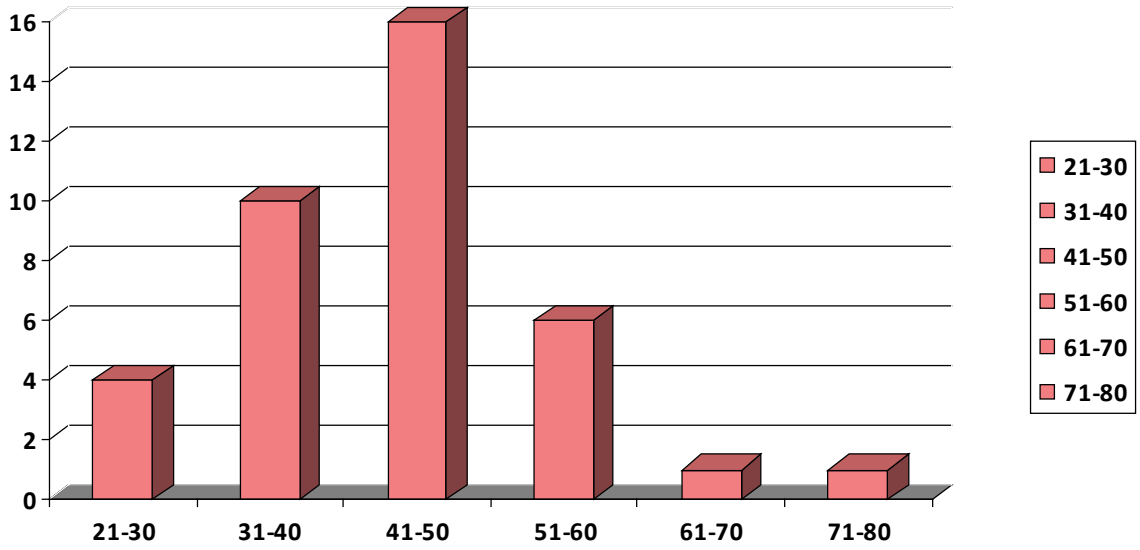

Fig 1: Age distribution of the study population

Before neoadjuvant chemotherapy 30 (78.95%) cases tumor size were in T4 stage and 8 (21.05%) cases were in T_3 stage. After neoadjuvant chemotherapy 1 (2.63%) cases were in T_1, 6 (15.79%) cases in T_2, 1 (2.63%) were in T_3, 30 (78.79%) cases were in T_4. In lymph node before neoadjuvant chemotherapy 10 (26.32%) cases were in N0, 18 (47.37%) cases in N_1 and 8 (21.05%) cases were in N_2.. After neoadjuvant chemotherapy 14 (36.84%) cases were in N_0, 16 (42.10%) in N_1 stage and 6 (15.79%) cases were in N_2.

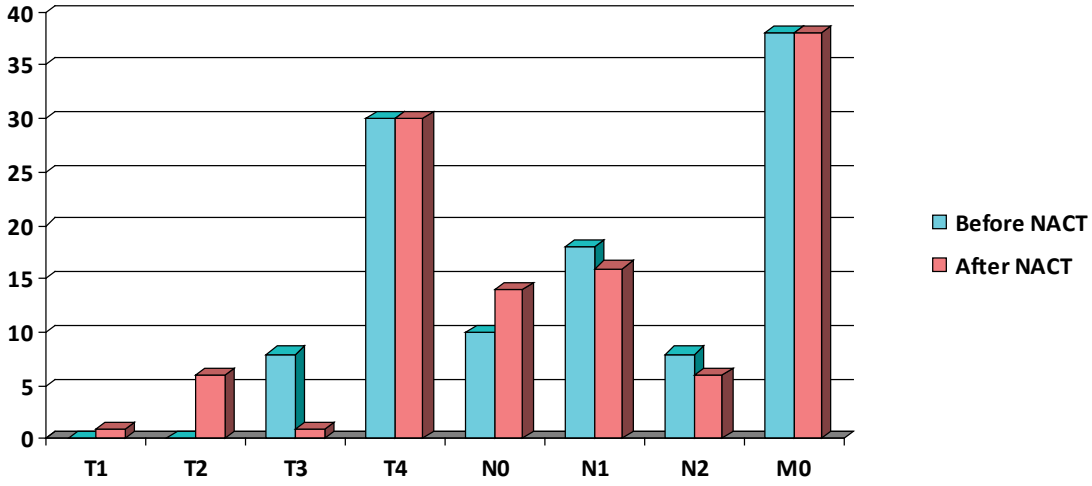

Fig 2: Frequency of TNM stages before and after NACT

Table 1: Distribution of patients according to different variables

Variables	Frequency	%
Histopathology		
Infiltrating Ductal Cell Carcinoma	37	97.37
Lobular Carcinoma	1	2.3
Tumour Grade		
Grade I	1	2.93
Grade II	31	81.58
Grade III	6	15.79
Receptor Status		
ER +Ve	17	44.74
PR +Ve	11	28.95
Her-2 +Ve	4	10.52
Tripple Negative	17	44.74
Lymphovascular Invasion		
Yes	15	39.47
No	23	60.53
Margin Clearance		
Involved	2	5.26
Not Involved	36	94.74
Type of Operation		
MRM	34	89.47
BCS with SLNB	2	5.26
LD flap Coverage	1	2.63
Toilet Mastectomy	1	2.63
Early Complications		
Marginal Necrosis after MRM	1	2.63

Common histopathological findings were infiltrating ductal cell carcinoma (97.37%) and lobular carcinoma (2.63%). Large number of patients were in grade-II (69.0%), followed by grade-III (15.79)% and grade-I (2.63%). Out of 38 cases 17 (44.74%) cases showed estrogen receptor positive, progesterone was positive in 11 (28.95%) cases, her-2 receptor was positive in 4(10.52) cases.

Lympho-vascular invasion was positive in 15(39.47%) cases and negative in 23(60.53%) cases. Margin clearance was positive in 36(94.74%) cases and margin was involved in 2(5.26%) cases.

Four types of operative procedures were performed. Among them modified radical mastectomy is largely perfomed procedure in 34 (89.47%) cases. Others are breast conserving surgery with sentinel lymphnode biopsy (5.26%), LD flap coverage (2.63%) and Toilet mastectomy (2.63%). Only one case developed marginal necrosis after modified radical mastectomy.

Discussion

LABC treatment is the biggest challenge after diagnosis, since at stage III there is higher risk of distal metastasis. There are no standard therapy procedures conducted for LABC patients, particularly because this patient group is very heterogeneous.

In this study the maximum incidence was seen in the 5th decade 42.10%, next to it was the 4th decade 26.32%. Mean age of the patient was 43.66 years. Previous study reported locally advanced breast carcinoma ranged from 22 to 81 years age (mean age 47.6 years), with 54% women in the pre and perimenopausal age group.[7]

In this study infiltrating ductal cell carcinoma (97.37%) was the most common findings in histopathological report and other one was lobular carcinoma (2.63%). Histopathological report was obtained from preoperative core biopsy and postoperative pathological specimen.

Surgery is the main treatment option of locally advanced breast cancer. 34 (89.47%) patients were undergone to modified radical mastectomy out of 38 patients. Other surgical procedures were breast conserving surgery with sentinel lymphnode biopsy (5.26%), LD flap coverage (2.63%) and toilet mastectomy (2.63%). After surgical procedure out of 38 patients, 2 (5.26%) patient showed margin involved and another patient showed marginal necrosis after modified radical mastectomy.

Raina et al. conducted a observational study in Institute Rotary Cancer hospital over the patients having locally advanced carcinoma of the breast following Neoadjuvant chemotherapy. In that study Modified Radical Mastectomy was performed about 91.4% of patients.[13]

Early postoperative complication following surgical procedure in breast cancer includes flap necrosis, margin necrosis, wound dehiscence, seroma, surgical site infection, hematoma, altered sensation and pain. In this study only one patient developed marginal necrosis which was observed in 5th postoperative day and was managed by delayed primary closure.

Though breast conserving surgery is newer innovative technique, our mostly performed procedure was modified radical mastectomy. Because Bangladesh is developing country and most of the patients are from low socioeconomic condition. Radiotherapy facility is prerequisite for breast conservation and it is not available in all level of hospital in Bangladesh.

Conclusions:

Treatment of LABC is the biggest challenge after diagnosis. It was observed that in some patients after having all criteria to perform breast conservation surgery was not possible due to low resources, lack of facilities and lack of patient's compliance. So modified radical mastectomy was the main surgical option in this study.

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