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Rate of Conversion of Conservative Breast Surgery to Mastectomy in Patients with Early Breast Cancer Versus Late Breast Cancer after Down Staging

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Abstract

Background: After lung cancer, breast cancer is the most frequent cancer among women and the second greatest cause of cancer death.

Aim of Study: The rate and causes of breast conservative surgery conversion to mastectomy in early breast cancer versus down staging after neoadjuvant treatment are identified.

Patients and Methods: During this study, 40 females with breast cancer were enrolled and divided into two groups. All patients were subjected to conservative breast surgery and intraoperative frozen section; 20 patients with early breast cancer andanother 20 patients who received neoadjuvant therapy. All patients were subjected to history taking, clinical examination, radiologic investigations, core biopsy, preoperative laboratory investigations and histopathological examination of excised mass.

Results: There were no statistically significant differences between study groups as regard rate of conversion to mastectomy, frozen results, post-operative compilations and response and Clipping distribution.

Conclusion: The rate of conversion to mastectomy, frozen results, post-operative compilations and response, and clipping distribution were similar in cases of early breast cancer and late stages subjected to neoadjuvant down staging treatment. As a result, all cases of late breast cancer were down staged using neoadjuvant therapy rather than undergoing mastectomy.

Key Words: *Conservative breast surgery – Mastectomy – Breast cancer versus – Down staging.*

Introduction

THE most frequent malignant tumour in women globally is breast cancer, and early-stage, non-metastatic cases of the illness can be cured in roughly 70-80% of patients. With currently available treatments, advanced breast cancer with distant metastases is regarded as incurable **[1]**.

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In 2018, there were expected to be 404-920 new cases of breast cancer in the 28 member states of the European Union (EU), with a 144.9/100,000 annual incidence rate and a 32.9/100,000 annual mortality rate, with 98 755 expected deaths. Over 2.1 million new cases of breast cancer were detected globally in 2018, accounting for about 1 in 4 cancer cases among women, and 630 000 people died from it **[2]**.

Through the use of better screening and diagnostic techniques, such as sonomammography, contrast enhanced mammography, and breast MRI, the diagnosis and treatment of early-stage breast cancer have dramatically improved over the past few decades **[3]**.

William Stewart Halsted's publication of the groundbreaking "results of the cure of cancer of the breast" in 1894 marked the beginning of the current age of breast cancer treatment. The development of what were seen as "modern" biological and surgical treatments for breast cancer was based on earlier discoveries made by anatomists, physiologists, and surgeons. In the Roosevelt Hospital in New York, Halsted introduced the Halsted radical mastectomy in 1882. At the Johns Hopkins Hospital in Baltimore, it was popularised and scientifically used. In the past two decades, the development of less invasive mastectomies for the treatment of breast cancer has been monitored for effectiveness and equivalent results for locoregional management with conservative treatments followed by radiotherapy **[4]**.

Compared to mastectomy, breast-conserving therapy, which consists of breast conservative operations and radiotherapy, has become the standard for local breast cancer control. BCT benefits

from being more aesthetically pleasing and less intrusive while yet keeping the natural breast tissue. BCT consequently leads to improved physical and mental health and has been demonstrated to enhance patients' quality of life. Nonetheless, there have been concerns raised about the use of BCT in young women under 40 with early-stage breast cancer. Recent research has demonstrated that young individuals with early-stage breast cancer benefit equally from BCT and mastectomy in terms of survival. Recent research, however, has shown that patients treated with BCT fare better than those treated with mastectomy. This could be a result of advancements in adjuvant therapy **[5]**.

Neoadjuvant therapy is becoming a common therapeutic choice for early-stage (stage I-II) breast cancer patients as well as for locally progressed breast cancer patients. For patients who have responded well to Neoadjuvant therapy, the benefits of Neoadjuvant include reducing the amount of breast and axillary surgery, facilitating breast conservative surgery, and facilitating axillary lymph node clearance. Additionally, Neoadjuvant provides patients with individualised post-treatment prognostic information for additional adjuvant treatments (mainly in Her2 positive and triple negative breastcancer) **[6]**.

Patients and Methods

This comparative analytical observational study was done in the Department of General Surgery, Faculty of Medicine, Ain Shams University Hospital and El Matarya Teaching Hospital, from September 2022 until March 2023. This study included a total of 40 women with breast cancer divided into two groups; Group A included 20 patients with early breast cancer and group B included 20 patient with late breast cancer received neoadjuvant chemotherapy.

Inclusion criteria:

Female patients aged 20-80 years old, with no previous axillary surgery or radiotherapy, medically fit to undergo the procedure, suitable for conservative management and approving to share data and medical photography were enrolled.

Exclusion criteria:

Women unfit for surgery with previous axillary surgery or radiotherapy, refused to share data and medical photography, needed mastectomy from the start as in large tumor to breast ratio, multicentric or multifocal tumors “relative indication”, inflammatory or recurrent breast cancer and patients refused to undergo the operation were excluded.

Sampling method:

A randomization for a convenience sample.

Study procedures:

According to inclusion and exclusion criteria; patients were subjected to:

Complete history taking of clinical importance including:

Opening the consultation "Doctor":

Washing hands and wearing PPE if appropriate. Introduce himself to the patient including his name and role. Confirmation of the patient's name and date of birth. Explanation that doctor like to take a history from the patient. Gaining consent to proceed with taking a history

Presenting complaint:

Using open questioning to explore the patient's presenting complain.

History of presenting complaint:

- Site: Asking where the breast lump is.
- Onset: Clarifying when the breast lump first developed.
- Character: Asking the patient to describe how the breast lump feels.
- Radiation: If pain was associated with the breast lump, asking if it radiates.
- Associated symptoms: Asking if there are any other associated symptoms.
- Time course: Asking how the breast lump has changed over time.
- Exacerbating or relieving factors: Asking if anything makes the breast lump worse or better.
- Severity: Assessing the severity of any associated pain by asking the patient to grade it on a scale of 0-10.

Screening for other key symptoms including red flag features.

Exploring the patient's ideas, concerns and expectations.

Summarizing the patient's presenting complaint

Systemic enquiry:

Screening for relevant symptoms in other body systems.

Past medical and surgical history:

Asking if the patient has any medical conditions.

Asking if the patient has had any relevant surgical procedures.

Taking a brief obstetrics and gynecology history for breast cancer risk factors.

Asking if the patient has any allergies and if so, clarifying what kind of reaction they had to the substance.

Drug history:

Asking if the patient was currently taking any prescribed medications or over-the-counter remedies.

Family history:

Asking the patient if there is any family history of breast or ovarian cancer.

Social history:

Exploring the patient's general social context. Taking a smoking history. Taking an alcohol history. Asking about OCPS drug use. Gather details about the patient's occupation.

Closing the consultation:

Summarising the salient points of the history back to the patient and asking if they feel anything has been missed. Thanking the patient for their time. Disposing of PPE appropriately and wash hands.

Key communication skills:

Active listening, summarizing and signposting.

Clinical examination with special emphasis on:

Inspection:

The breasts were first visually inspected with the patient in a seated position facing the examiner.

The patient was instructed to place their hands on their hips as well as raise them above their head. This allowed the examiner to assess the breasts in many positions and observe overall size, shape, symmetry, nipple size, shape, texture, and color.

Variations in any of these were noted concerning previous exams as well as in comparison to the contralateral breast.

Areas of skin thickening, dimpling, or fixation relative to the underlying breast tissue were also noted on visual inspection. These were exaggerated during movement as well as by asking the patient to flex the pectoral muscles with hands on hips.

Palpation:

After completing the visual inspection, the patient was instructed to lay supine.

If a side-specific breast complaint was being evaluated, the examiner began his/her exam on the opposite, or "normal" side.

As one breast was examined, the other was covered for the patient's comfort.

The patient placed the ipsilateral hand above and/or behind their head to flatten the breast tissue as much as possible.

The breast tissue itself was evaluated using a sequence of palpation that allowed serial progression from superficial to deeper tissues.

This was best accomplished utilizing the examiner's finger pads, usually with the hand in a slightly cupped position.

A variety of techniques exist, but the most often used were the radial "wagon wheel" or "spoke" method, the vertical strip method, and the concentric circle's method.

As stated previously, it was important that the examiner chooses a method and is consistent from exam to exam.

The overall consistency of the breast was documented (soft, firm, nodular).

Any masses or tender lesions were noted concerning their location in a conventional quadrant or clock face configuration.

When documenting findings, characteristics of any abnormalities were included, such as size, shape, texture, mobility, delimitation, tenderness, and approximate depth.

Attention was then turned to the nipple areolar complex, where these tissues themselves were palpated for abnormalities.

Also, the examiner assessed for expressable nipple discharge by placing both hands on the breast on either side of the areola and gently but firmly pressing down into the breast tissue.

Following a complete exam of the breast, the axilla and supraclavicular area were palpated for lymphadenopathy. Lymph node abnormalities presented in a variety of forms, but most often any palpable nodes of concern was slightly enlarged and have a somewhat firmer texture than the typical soft, rubbery one.

As with any masses, approximate document number, size, texture, mobility, and delimitation of any palpable lymph nodes.

Occasionally, the entire axilla was felt "full," without defined lymphadenopathy. This related to the patient's normal anatomy or indicated the presence of diffusely matted lymph nodes.

Documentation:

Common terminology found in the documentation of a breast exam includes the following:

Whether symmetrical or asymmetrical, ptotic, pendulous, with or without scars or deformities, texture (soft, nodular, fibrocystic, dense, presence of inframammary ridge in large breasts), masses (described as indicated above versus no masses evident), nipple-areolar complex (pink, brown, everted, inverted, discharge present/absent with description, presence of dry, scaly texture.

Radiologic investigation:

Mammography: The cornerstone of breast cancer diagnosis. According to reports, 80-90% of people with dense breast parenchyma had a decreased sensitivity for identifying palpable breast cancer.

Ultrasound: It can distinguish between cystic and solid lesions and is utilised in patients younger than 35 due to dense breasts as a primary inquiry. In patients older than 35, it is used as a complement to mammography and improves its accuracy. Its sensitivity for detecting malignancy is up to 98.4%, while its negative predictive value for properly diagnosing benign masses is up to 99.5%.

Breast magnetic resonance imaging: The most sensitive test for assessing the extent of invasive breast cancer is dynamic contrast enhanced breast magnetic resonance imaging; in 16% of patients, it finds new tumour locations that weren't previously recognised. Its information on tumour size and extent can be used to decide whether mastectomy or breast conservation is the optimal surgical course of action. The technique is expensive and it is indicated in:

When screening females under 35 with a significant family history, it is important to consider the following factors: The breast is too dense to assess, the extent of the disease cannot be determined, there is a discrepancy between the clinical and imaging findings, the patient wants breast preservation surgery (BPS), Paget's disease has been confirmed, and the patient is keen on having BPS.

Biopsies:

Breast core biopsy:

The above tests cannot replace histological confirmation Ultrasound guidance optimises targeting accuracy, patients with a clinically suspicious or focal solid lesion routinely have a core biopsy to establish a diagnosis. Core biopsy, with its higher sensitivity and specificity (96.7% and 98.7%), it is used to detect receptors " ER, Pr, Her2, Ki67 ".

Axillary fine needle aspiration cytology: It is used if a suspicious LN in axilla.

Routine pre-operative Laboratory investigations:

Standard tests include a full blood count, liver and kidney function checks, a coagulation profile including the prothrombin time, partial thromboplastin time, and international normalised ratio, as well as indicators for tumours, hepatitis B and C viruses, ABO blood groups, and Rh. Three tumour markers have been used to track metastatic breast cancer (advanced disease) in breast cancer care: Cancer antigen 15-3 (CA 15-3), cancer antigen 27.29 (CA 27.29), and carcinoembryonic antigen (CEA), but they have not been found to be helpful to find a breast cancer recurrence or lengthen lives.

The operation:

- Group A patients: Gone for BCS and SLN biopsy or axillary clearance.
- Group B patients: Gone for NAC with clipping of the mass and wiring at the day of operation then BCS with axillary clearance after reassessment.

All 40 patients went to BCS + frozen section:

Breast conservative surgery: A standard wide local incision was made over or near the breast tumor. The lump or abnormality was removed Fig. (1) and remove some of the normal breast tissue around it "safety margin" "with marking of the excised tissue": "SS short superior", "LL long lateral", "DD double deep" Fig. (2), then sent to frozen histopathological assessment.

Sentinel LN biopsy: A blue dye was injected by the surgeon close to the tumour in an axilla that had been clinically and radiologically cleared of tumours. The surgeon searches for lymph nodes that have blue dye stains on them.

Frozen section: Cryosection is the formal term for this process. A cryotome is a type of microtome that uses cold cutting to create tiny blocks of frozen tissue; after examining cytology preparations made on the specimen (such as touch imprints), the

pathologist can only diagnose the tissue as "benign" or "malignant".

If the margin of breast still positive we went for mastectomy and if SLNB was positive we went for axillary clearance.

Histological assessment of the excised mass and LNs.

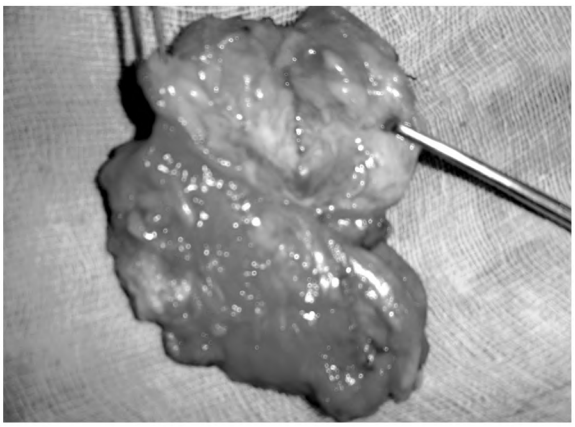

Fig. (1): Lumpectomy.

Fig. (2): Marking of breast lump.

Statistical analysis:

Recorded data were analyzed using the statistical package for social sciences, version 23.0 (SPSS Inc., Chicago, Illinois, USA). The quantitative data were presented as mean± standard deviation and ranges. Also qualitative variables were presented as number and percentages.

Results

The two groups were comparable in age with the Mean ± SD in each of group A early breast cancer group and group B neo-adjuvant group was 52.90±11.19 compared to 48.10±10.75 respectively, as there is no statistically significant difference between the groups with p-value (p=0.175 non-significant), also mean weight “kg” in group A early breast cancer group and group B neo-adjuvant group (82.60±7.00 and 80.40±6.50) respectively, with p-value (p=0.310 non-significant); as for the height “cm” in group A early breast cancer group and group B neo-adjuvant group (162.70±5.90 and 164.95±3.30) respectively, with p-value (p=0.145 non-significant); while, there was the majority of cases 23/40 (57.5%) were ASA score I, 10 patients in group A early breast cancer group and 13 patients group B neo-adjuvants group, with p-value (p=0.293 non-significant) (Table 1).

The most common co-morbidity was HTN 11 patients (27.5%), 7 patients out of them were group A early breast cancer group and 4 patients were group B neo-adjuvants group, with p-value (p=0.288), followed by DM 8 patients (20%), 5 patients out of them were early breast cancer group and 3 patients were neo-adjuvants group, with p-value (p=0.429 non-significant) (Table 2).

The majority cases were diagnosed on the left side was 23 patients (57.5%), 12 patients out of them were early breast cancer group and 11 patients were neo-adjuvants group, followed by left side of breast 14 patients (35%), 6 patients out of them were early breast cancer group and 8 patients were neo-adjuvants group.

While, tumor size ranged from 1.5-24 with mean 5.42±5.14 for early breast cancer group and range 3-49 for Neo-adjuvants Group was mean 14.57±10.14.

The majority cases were diagnosed on the UOQ site was 21 patients (52.5%), 20 patients out of them were early breast cancer group and one patient were neo-adjuvants group, as for the Axillary there was 13 patients (32.5%) were Right palpable, 6 patients out of them were early breast cancer group and 7 patients were neo-adjuvants group (Table 3).

The majority cases were diagnosed on the UOQ site was 21 patients (52.5%), 20 patients out of them were early breast cancer group and one patient were neo-adjuvants group, as for the Axillary there was 20 patients (50%) were positive axillary, 4 patients out of them were early breast cancer group and 16 patients were neo-adjuvants group. While, tumor size ranged from 0.99-23.2 with mean 2.92±2.82 for early breast cancer group and range 1.43-27.2 for Neo-adjuvants Group was mean 11.66±7.00 (Table 4).

Core biopsy there was 30 patients (75%) were IDC grade 2, 20 patients out of them were early breast cancer group and 10 patients were neo-adjuvants group (Table 5).

Table (1): Demographic data distribution in both groups.

Demographic data	Total (n=40)	Group A	Group B	Test value	*p*-value
Age (years):					
Mean ± SD	50.50±11.10	52.90±11.19	48.10±10.75	*t*: 1.384	0.175
Range	23-a72	41-a72	23-a71		
Weight (kg):					
Mean ± SD	81.50±6.76	82.60±7.00	80.40±6.50	*t*: 1.030	0.310
Range	65-94	65-94	69-94		
Height (cm):					
Mean ± SD	163.83±4.86	162.70±5.90	164.95±3.30	*t*: 1.488	0.145
Range	152-172	152-172	158-170		
ASA score:					
I	23 (57.5%)	10 (50.0%)	13 (65.0%)	x^2: 2.458	0.293
II	15 (37.5%)	8 (40.0%)	7 (35.0%)		
III	2 (5.0%)	2 (10.0%)	0 (0.0%)		

Table (2): Comorbidities data distribution in both groups.

Comorbidities	Total (n=40)	Group A	Group B	$_x^2$	*p*-value
DM	8 (20.0%)	5 (25.0%)	3 (15.0%)	0.625	0.429
HTN	11 (27.5%)	7 (35.0%)	4 (20.0%)	1.129	0.288
AF	2 (5.0%)	1 (5.0%)	1 (5.0%)	0.000	1.000
Cardiomyopathy	1 (2.5%)	1 (5.0%)	0 (0.0%)	1.026	0.311
IHD	1 (2.5%)	1 (5.0%)	0 (0.0%)	1.026	0.311
Bronchial asthma	1 (2.5%)	0 (0.0%)	1 (5.0%)	1.026	0.311
Rheumatic arthritis	1 (2.5%)	0 (0.0%)	1 (5.0%)	1.026	0.311

Table (3): Clinical presentation and labs findings distribution in both groups.

Clinical Presentation and labs findings	Total (n=40)	Group A	Group B
Side of breast:			
Left	14 (35.0%)	6 (30.0%)	8 (40.0%)
Right	23 (57.5%)	12 (60.0%)	11 (55.0%)
Two right	1 (2.5%)	1 (5.0%)	0 (0.0%)
Rt breast nonpalpable lump discovered by PET	1 (2.5%)	0 (0.0%)	1 (5.0%)
No Palpable	1 (2.5%)	1 (5.0%)	0 (0.0%)
Tumor size (cm):			
Mean ± SD	4.99±6.18	5.42±5.14	14.57±10.14
Range	1.5-49	1.5-24	3-49
Site:			
Retroareolar	6 (15.0%)	0 (0.0%)	6 (30.0%)
LIQ	4 (10.0%)	0 (0.0%)	4 (20.0%)
LOQ	4 (10.0%)	0 (0.0%)	4 (20.0%)
UIQ	5 (12.5%)	0 (0.0%)	5 (25.0%)
UOQ	21 (52.5%)	20 (100.0%)	1 (5.0%)
Axillary:			
Lt Amalgamated LNs	4 (10.0%)	0 (0.0%)	4 (20.0%)
Rt Amalgamated	1 (2.5%)	0 (0.0%)	1 (5.0%)
Rt Palpable	13 (32.5%)	6 (30.0%)	7 (35.0%)
Not Palpable	19 (47.5%)	14 (70.0%)	5 (25.0%)
Palpable LNs	3 (7.5%)	0 (0.0%)	3 (15.0%)

Table (4): Diagnostic findings distribution in both groups.

Diagnostic findings	Total (n=40)	Group A	Group B
Site:			
Retroareolar	6 (15.0%)	0 (0.0%)	6 (30.0%)
LIQ	4 (10.0%)	0 (0.0%)	4 (20.0%)
LOQ	4 (10.0%)	0 (0.0%)	4 (20.0%)
UIQ	5 (12.5%)	0 (0.0%)	5 (25.0%)
UOQ	21 (52.5%)	20 (100.0%)	1 (5.0%)
Tumor size (cm):			
Mean ± SD	7.79±5.83	2.92±2.82	11.66±7.00
Range	0.99-27.2	0.99-23.2	1.43-27.2
Axillary:			
Negative	20 (50.0%)	16 (80.0%)	4 (20.0%)
Positive	20 (50.0%)	4 (20.0%)	16 (80.0%)

Table (5): Core Biopsy distribution in both groups.

Core biopsy	Total (n=40)	Group A	Group B
IDC Grade 2	30 (75.0%)	20 (100.0%)	10 (50.0%)
IDC Grade 3	4 (10.0%)	0 (0.0%)	4 (20.0%)
ILC Grade 2	6 (15.0%)	0 (0.0%)	6 (30.0%)

There was ER positive 32 patients (80%), 18 patients out of them were early breast cancer group and 14 patients were neo-adjuvants group, with p-value (p=0.205 non-significant); also, there was PR positive 30 patients (75%), 17 patients out of them were early breast cancer group and 13 patients were neo-adjuvants group, with p-value (p=0.209 non-significant); as for the Her2 positive 8 patients (20%), 2 patients out of them were early breast cancer group and 6 patients were neo-adjuvants group, with p-value (p=0.236 non-significant) (Table 6).

This table shows that group B 20 patients (100%) were good response; and clipping 20 patients (100%) (Table 7).

The rate of conversion to mastectomy in the early breast cancer group was 15% (3/20) and in the second group 10% (2/20). The result is insignificant with p-value (p=0.633) (Table 8).

All cases in both groups were showing a no post-operative complications (Table 9).

Table (6): Receptors distribution in both groups.

Receptors	Total (n=40)	Group A	Group B	x^2	p-value
ER:					
Negative	6 (15.0%)	1 (5.0%)	5 (25.0%)	3.167	0.205
Positive	32 (80.0%)	18 (90.0%)	14 (70.0%)		
Weak Positive	2 (5.0%)	1 (5.0%)	1 (5.0%)		
PR:					
Negative	6 (15.0%)	1 (5.0%)	5 (25.0%)	4.533	0.209
Positive	30 (75.0%)	17 (85.0%)	13 (65.0%)		
Weak Positive	4 (10.0%)	2 (10.0%)	2 (10.0%)		
Her2:					
Negative	32 (80.0%)	18 (90.0%)	14 (70.0%)	1.406	0.236
Positive	8 (20.0%)	2 (10.0%)	6 (30.0%)		

Table (7): Group B Response and Clipping distribution in neo-adjuvant group.

	Group B (n=20)
Response:	
Good	20 (100.0%)
Clipping:	
Yes	20 (100%)

Table (8): Comparison between Early breast cancer group and Neo-adjuvants Group according to conversion to mastectomy.

Conversion to mastectomy	Total (n=40)	Early breast cancer group (n=20)	Neo-adjuvants Group (n=20)	OR (C.I. 95%)	*p*-value
No	35 (87.5%)	17 (85.0%)	18 (90.0%)	1.59	0.633
Yes	5 (12.5%)	3 (15.0%)	2 (10.0%)	(0.24-10.7)	

Table (9): Post-operative complications in both groups.

Post-operative complications	Total (n=40)	Early breast cancer group (n=20)	Neo-adjuvants Group (n=20)	x^2	*p*-value
No	0 (0%)	0 (0%)	0 (0%)	0.000	1.000
Yes	40 (100.0%)	20 (100.0%)	20 (100.0%)		

Discussion

In our study all cases were subjected to conservative breast surgery. There were no statistically significant differences between study groups as regard rate of conversion to mastectomy, frozen results, post-operative compilations.

Neoadjuvant chemotherapy (NCT) was used in a clinical environment inside a single institution by Mo et al. (2017) to assess the actual breast-conserving rate. They stated that NCT raised the eligibility for breast conservative surgery (BCS) in a clinical setting from 40.4% to 62.6%. Prior to receiving NCT, 157 patients (59.6%) and 107 patients (40.4%), respectively, were candidates for total mastectomy (TM) and BCS. After chemotherapy, 61 of the 158 patients were qualified for BCS, with a conversion rate of 38.6%. The BCS eligibility rate was raised by NCT from 40.4% to 62.6%. Of the 61 patients, 53 opted to have BCS, and 46 (86.8%) of those procedures were effective. 100 patents (93.5%) of the 107 BCS applicants who were first considered underwent BCS. The conversion rates for the luminal, human epidermal growth factor receptor 2 (HER2+), and triple-negative breast cancer (TNBC) groups, respectively, were 35.4%, 50.0%, and 40.5%. Using standard chemotherapy regimens for NCT, the conversion rate from mastectomy to BCS was 38.6%, which is comparable to the results of other earlier studies. The rise in BCS eligibility was 22.2% in absolute terms, which is higher than the figure found in the CALGB40603 research for TNBC. When many subtypes, including the luminal type, were assessed in their sample, the increase in BCS eligibility is more notable **[7]**.

A prospective trial conducted by Golshan et al. (2015) for TNBC (CALGB40603) revealed a 42% conversion rate from patients who were BCS-ineligible to BCS-eligible patients, resulting in an increase in BCS eligibility of 14% in absolute terms **[8]**.

The same researchers' subsequent HER2-positive breast cancer study (CALGB40601) found that NCT raised the BCS eligibility rate from 41% to 64%. (Golshan et al., 2016) **[9]**.

The response to NCT is worse in luminal subtype breast cancer patients as reported by Kim et al. (2015) **[10]**.

The rate of local recurrence-free survival was not different between the surgery-first, preplanned BCS, and downstaged BCS groups (Shin et al., 2013) **[11]**.

In the CALGB40603 research by Golshan et al. (2015), 32% of the patients who qualified as BCS candidates did not attempt BCS. Moreover, 20% of the patients who were still BCS candidates after NCT but were BCS candidates before to NCT opted for mastectomy as opposed to BCS **[8]**.

In early operable tumours, Man and Cheung (2017) assessed the performance of neoadjuvant chemotherapy. Neoadjuvant chemotherapy is a helpful treatment to shrink the tumour in early breast cancer, enhancing the likelihood of breast-conserving surgery, they noted in correspondence with us. Those who have triple-negative disease or HER2-positive/oestrogen receptor-negative disease benefit the most from it. 80 percent of the patients who experienced a pathological complete response following neoadjuvant treatment had human epidermal growth factor receptor 2 (HER2)-positive or triple-negative illness. The likelihood of undergoing breast-conserving surgery was increased by hormonal receptor negativity, which was linked to a higher pathological complete re-

sponse rate. In the subgroup analysis, patients with stage II to stage III illness were further categorised. Patients with stage III disease signified those with locally progressed disease, while stage II disease was considered early operable breast cancer. Each institution has its own definition of a pathological full reaction, though. They used the ABCSG study's definition for the trial, which stipulates that non-invasive breast residuals are acceptable but that there should be no invasive residual illness in the breast or nodes **[12]**.

Gampenrieder et al. (2013) had shown no difference in DFS or OS between patients with ypT0ypN0 and ypTisypN0 tumours **[13]**.

Core biopsies with immunohistochemical labelling and proliferation index were employed in Man and Cheung's (2017) investigation to divide patients into luminal A, luminal B, triple-negative, or HER2-positive subgroups. The study also revealed consistent results **[12]**.

The influence of a pathological full response on prognosis in various intrinsic subtypes of breast cancer was highlighted in a 2012 study by the German Breast Group. The best DFS (p0.001) and a tendency towards higher OS were seen in patients with ypT0N0 tumours. Most notably, only in extremely aggressive tumours, such as those with negative ER or PR status, was pathological complete response predictive of DFS and OS (von Minckwitz et al., 2012) **[14]**.

If patients with HER2-positive or triple-negative tumours experienced a pathological full response following neoadjuvant chemotherapy, their prognosis was improved. On the other hand, residual disease in the breast and nodes was linked to worse long-term DFS as related (2013) Corben et al. **[15]**.

According to the Cen et al. (2021) study, there were 214 patients with NAC, 61 (28.5%) of them had BCS post-neo adjuvant, and 19 (31.1%) of them had a full pathological response. 9 (21 %) of the 42 patients who were still being treated had a near or positive margin and required resection. They stated that re-excision frequently occurred before NAC with larger tumour sizes and ER positive tumours **[16]**.

In a retrospective analysis conducted between 2012 and 2018, Kaczmarski et al. (2019) found that 291.065 patients received initial BCT procedures, with 19% requiring resection due to positive margins **[17]**.

Re-excision rates following BCS and oncoplastic surgery were 15.6 and 14. 1, respectively, and the rate of conversion to mastectomy was the same between BCS and oncoplastic surgery, according to Heeg et al. (2020) Research, which was published in 2022 **[18]**.

According to a study by Chakedis et al. (2022), 9054 BCS procedures were conducted over a 5-year period, and 18.8% of those patients required a second BCS procedure **[19]**.

The accuracy of 93.77 was achieved by the Godazandeh et al. (2021) meta-analysis, which demonstrated the excellent sensitivity and specificity for the frozen segment in BCS. These effects lessen the need for repeat surgery and ease patient angst **[20]**.

Conclusion:

The rate of conversion to mastectomy, frozen results, post-operative compilations and response, and clipping distribution were similar in cases of early breast cancer and late stages subjected to neoadjuvant down staging treatment. As a result, all cases of late breast cancer were down staged using neoadjuvant therapy rather than undergoing mastectomy.

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References

1- HARBECK N., PENAULT-LLORCA F., CORTES J., GNANT M., HOUSSAMI N., POORTMANS P., RUDDY K., TSANG J., CARDOSO F.: Breast Cancer Nat. Rev. Dis. Primers, 5: 66, 2018.

2- CARDOSO F., KYRIAKIDES S., OHNO S., PENAULT-LLORCA F., POORTMANS P., RUBIO I.T., ZACKRISSON S. and SENKUS E.: Early breast cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Annals of Oncology, Aug. 1; 30 (8): 1194-220, 2019.

3- HEYWANG-KOEBRUNNER S., BOCK K., HEINDEL W., HECHT G., REGITZ-JEDERMANN L., HACKER A. and KAEAEB-SANYAL V.: Mammography Screening-as of 2013. Geburtshilfe und Frauenheilkunde, Oct. 73 (10): 1007-16, 2013.

4- BLAND K.I., KLIMBERG V.S. and COPELAND III E.M.: Halsted radical mastectomy. In The Breast, Jan. 1 (pp. 422-442). Elsevier, 2018.

5- SUN Z.H., CHEN C., KUANG X.W., SONG J.L., SUN S.R. and WANG W.X.: Breast surgery for young women

with early-stage breast cancer: Mastectomy or breast-conserving therapy?. Medicine, May 5; 100 (18), 2021.

6- RUBIO I.T. and SOBRIDO C.: Neoadjuvant approach in patients with early breast cancer: Patient assessment, staging, and planning. The Breast, Mar. 1; 62: S17-24, 2022.

7- MO H., KIM Y., RHU J., LEE K.H., KIM T.Y., IM S.A., LEE E.S., LEE H.B., MOON H.G., NOH D.Y. and HAN W.: Actual conversion rate from total mastectomy to breast conservation after neoadjuvant chemotherapy for stages II-III breast cancer patients. Journal of Breast Disease, Dec. 31; 5 (2): 51-6, 2017.

8- GOLSHAN M., CIRRINCIONE C.T., SIKOV W.M., BERRY D.A., JASINSKI S., WEISBERG T.F., SOMLO G., HUDIS C., WINER E. and OLLILA D.W.: Impact of neoadjuvant chemotherapy in stage II-III triple negative breast cancer on eligibility for breast-conserving surgery and breast conservation rates: Surgical results from CALGB 40603 (Alliance). Annals of Surgery, Sep. 262 (3): 434, 2015.

9- GOLSHAN M., CIRRINCIONE C.T., SIKOV W.M., CAREY L.A., BERRY D.A., OVERMOYER B., HENRY N.L., SOMLO G., PORT E., BURSTEIN H.J. and HUDIS C.: Impact of neoadjuvant therapy on eligibility for and frequency of breast conservation in stage II-III HER2-positive breast cancer: Surgical results of CALGB 40601 (Alliance). Breast cancer research and treatment, Nov. 160: 297-304, 2016.

10- KIM M.K., HAN W., MOON H.G., AHN S.K., KIM J., LEE J.W., KIM J.Y., KIM T., LEE K.H., KIM T.Y. and HAN S.W.: Nomogram for predicting breast conservation after neoadjuvant chemotherapy. Cancer research and treatment: Official journal of Korean Cancer Association, Apr. 1; 47 (2): 197-207, 2015.

11- SHIN H.C., HAN W., MOON H.G., IM S.A., MOON W.K., PARK I.A., PARK S.J. and NOH D.Y.: Breast-conserving surgery after tumor downstaging by neoadjuvant chemotherapy is oncologically safe for stage III breast cancer patients. Annals of Surgical Oncology, Aug. 20: 2582-9, 2013.

12- MAN V.C. and CHEUNG P.S.: Neoadjuvant chemotherapy increases rates of breast-conserving surgery in early operable breast cancer. Hong Kong Med. J., Jun. 23 (3): 251-7, 2017.

13- GIORDANO S.H.: Update on locally advanced breast cancer. The oncologist., Dec. 8 (6): 521-30, 2003.

14- VON MINCKWITZ G., UNTCH M., BLOHMER J.U., COSTA S.D., EIDTMANN H., FASCHING P.A., GERBER B., EIERMANN W., HILFRICH J., HUOBER J. and JACKISCH C.: Definition and impact of pathologic complete response on prognosis after neoadjuvant chemotherapy in various intrinsic breast cancer subtypes. J. Clin. Oncol., May 20; 30 (15): 1796-804, 2012.

15- CORBEN A.D., ABI-RAAD R., POPA I., et al.: Pathologic response and long-term follow-up in breast cancer patients treated with neoadjuvant chemotherapy: A comparison between classifications and their practical application. Arch. Pathol. Lab. Med., 137: 1074-82, 2013.

16- CEN C., CHUN J., KAPLOWITZ E., AXELROD D., SHAPIRO R., GUTH A. and SCHNABEL F.: Margin assessment and re-excision rates for patients who have neoadjuvant chemotherapy and breast-conserving surgery. Annals of Surgical Oncology, Sep. 28: 5142-8, 2021.

17- KACZMARSKI K., WANG P., GILMORE R., OVERTON H.N., EUHUS D.M., JACOBS L.K., HABIBI M., CAMP M., WEISS M.J. and MAKARY M.A.: Surgeon re-excision rates after breast-conserving surgery: A measure of low-value care. Journal of the American College of Surgeons, Apr. 1; 228 (4): 504-12, 2019.

18- HEEG E., JENSEN M.B., HØLMICH L.R., BODILSEN A., TOLLENAAR R.A., LAENKHOLM A.V., OFFERSEN B.V., EJLERTSEN B., MUREAU M.A. and CHRISTIANSEN P.M.: Rates of re-excision and conversion to mastectomy after breast-conserving surgery with or without oncoplastic surgery: A nationwide population-based study. Journal of British Surgery, Dec. 107 (13): 1762-72, 2020.

19- CHAKEDIS J.M., CHANG S.B., TANG A., KUEHNER G.E., SAVITZ A.C., VUONG B. and KAVANAGH M.A.: Assessment of Surgeon Factors Associated With Margin Re-excision After Breast-Conserving Surgery. JAMA Network Open, Aug. 1; 5 (8): e2228100, 2022.

20- GODAZANDEH G., ALIZADEH-NAVAEI R., SHAMSHIRIAN A., HEYDARI K. and SHOJAEE L.: Diagnostic value of intraoperative frozen section in breast-conserving surgery: A systematic review and meta-analysis. International Journal of Cancer Management, Nov. 30; 14 (11), 2021.

مقدار تحويل عملية الجراحة التحفظية للثدى إلى استئصال الثدى بالكامل فى حالات سرطان الثدى المبكر فى مقابل سرطان الثدى بعد إعطاء مثبطات مساعدة للورم

سرطان الثدى هو الورم الخبيث الأكثر شيوعاً بين النساء فى جميع أنحاء العالم، ويمكن علاج حوالى ٧٠–٨٠٪ من المرضى بمراحل مبكرة من المرض غير النقيلى. سرطان الثدى المتقدم تعتبر النقائل البعيدة غير قابلة للشفاء مع العلاجات المتاحة حالياً فى عام ٢٠١٨، كان العدد المتو قع لحالات سرطان الثدى التى تم تشخيصها حديثاً فى ٢٨ دولة من دول الاتحاد الأوروبى ٤٠٤٩٢٠ حالة، مع معدل حدوث سنوى لسرطان الثدى يقدر بـ ١٤٤.٩/١٠٠٠٠٠ ومعدل الوفيات ٣٢.٩/١٠٠٠٠٠، مع ٩٨٧٥٥ حالة وفاة متوقعة. فى جميع أنحاء العالم، كان هناك حوالى ٢.١ مليون حالة سرطان ثدى تم تشخيصها حديثاً فى عام ٢٠١٨، وهو ما يمثل حوالى ١ من كل ٤ حالات سرطان بين النساء، وتوفى ٦٣٠ ألفاً منه.

وبالتالى، أجريت هذه الدراسة بهدف تقدير معدل وأسباب تحويل جراحة الثدى التحفظية إلى استئصال الثدى الكلى فى حالات سرطان الثدى المبكر والمتأخر بعد تعاطى العلاج.

أجريت هذه الدراسة فى قسم الجراحة العامة – كلية الطب – مستشفى جا معة عين شمس ومستشفى المطرية التعليمى من شهر سبتمبر ٢٠٢٢ حتى مارس ٢٠٢٣.

خلال هذه الدراسة، تم تسجيل ٤٠ أنثى مصابة بسرطان الثدى، بعد موافقة كل واحدة منهن وتم تقسيمهن إلى مجموعتين. خضع جميع المرضى لجراحة الثدى المحافظة وقسم التجميد أثناء العملية. ٢٠ مريضاً يعانون من سرطان الثدى المبكر و ٢٠ مريضاً آخرين تلقوا العلاج المساعد الجديد. خضع جميع المرضى لأخذ التاريخ، والفحص السريرى، والفحوصات الإشعاعية، والخزعة الأاسية،والفحوصات المخبرية قبل الجراحة والفحص التشريحى المرضى للكتلة المستأصلة.

\النتائج : أفادت دراستنا أن جميع الحالات خضعت لجراحة الثدى المحافظة. لم تكن هناك فروق ذات دلالة إحصائية بين مجموعات الدراسة فيما يتعلق بمعدل التحويل إلى استئصال الثدى والنتائج المجمدة والتصنيفات بعد الجراحة والاستجابة وتوزيع القطع.

\الإستنتاج : ينُصح باستخدام العلاج المساعد الجديد لتقليل مراحل سرطان الثدى المتأخر لزيادة معدل جراحة الثدى المحافظة.