



Changes in Surgical Management Over Time in Breast Cancer Patients Treated with Neoadjuvant Chemotherapy

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Introduction

- With advances in systemic and targeted therapies for breast cancer, downstaging following neoadjuvant chemotherapy (NAC) has increased.
- Surgical management of both the breast and axilla has evolved with the increasing use of breast conserving surgery (BCS) and sentinel lymph node biopsy (SLNB).
- The changes in surgical management in response to downstaging after NAC are still being evaluated.

Objective

- To evaluate our institutional experience with NAC
- To evaluate temporal trends in surgical technique over time

Methods

- We queried a prospectively maintained database of women with breast cancer who underwent NAC followed by an operation at our institution from 2007-2017
- 352 women with stage I-III breast cancer
- Compared trends over time between two groups: early group (diagnosed 2007-2013) and recent group (diagnosed 2014-2017)
- Groups were chosen based on the major inflection point of increasing use of BCS and SLNB
- Continuous and categorical variables compared using Welch t-test and chi-square test
- Median follow-up determined by the reverse Kaplan-Meier method
- Time to event analysis compared using the log-rank test

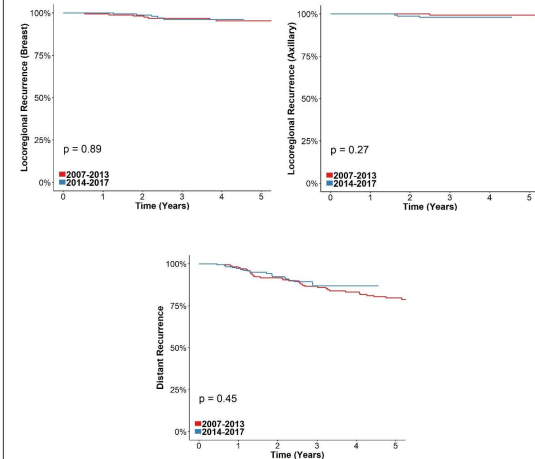
Results

- Table comparing clinical characteristics, surgical management, pathologic features, and complications between the early group and late group

Variable	Early Group (n=173)	Recent Group (n=179)	p-value
Age, mean (SD)	49.8 (12.1)	52.1 (14.5)	0.099
Histological type (%)			
Invasive ductal carcinoma	154 (90.1)	170 (95.5)	0.078
Subtype (%)			
Estrogen receptor positive	92 (54.8)	102 (57.0)	0.758
HER2 positive	51 (30.4)	95 (53.1)	<0.001
Triple negative	50 (29.8)	40 (22.3)	0.146
Clinical T stage (%)			0.059
1	26 (15.4)	36 (20.6)	
2	89 (52.7)	106 (60.6)	
3	33 (19.5)	21 (12.0)	
4	20 (11.8)	11 (6.3)	
Clinical N stage (%)			<0.001
N0	52 (30.4)	92 (52.3)	
N+	119 (69.6)	84 (47.7)	
Staging imaging (%)	148 (86.0)	135 (75.4)	0.017
Breast surgery (%)			0.021
BCS	44 (25.4)	67 (37.4)	
Mastectomy	129 (74.6)	112 (62.6)	
Axillary surgery (%)			<0.001
SLNB	42 (24.3)	113 (63.1)	
ALND	119 (68.8)	51 (28.5)	
SLNB + ALND	12 (6.9)	14 (7.8)	
pCR (%)	39 (22.5)	74 (41.6)	<0.001
Pathologic T stage (%)			0.001
0	43 (24.9)	78 (43.6)	
1	64 (37.0)	61 (34.1)	
2	39 (22.5)	29 (16.2)	
3	20 (11.6)	7 (3.9)	
4	7 (4.0)	4 (2.2)	
Pathologic N stage (%)			<0.001
0	90 (52.0)	130 (73.0)	
1	47 (27.2)	33 (18.5)	
2	23 (13.3)	12 (6.7)	
3	13 (7.5)	3 (1.7)	
Positive margin (%)	14 (8.1)	11 (6.2)	0.574
Any 30 day complication (%)	15 (8.7)	28 (15.6)	0.067
Breast 30 day complication (%)	11 (6.4)	23 (12.8)	0.060
Axillary 30 day complication (%)	3 (1.7)	3 (1.7)	1.000

Results

- With a median follow-up of 43.7 months, there was no significant difference between groups in:
 - breast recurrence (p=0.887)
 - axillary recurrence (p=0.298)
 - distant recurrence (p=0.455)



Conclusion

- Rates of BCS and SLNB following NAC significantly increased after 2013.
- The rate of pathologic complete response increased in more recent years likely due to improved therapies and patient selection.
- There was a low rate of local and regional recurrence overall.
- There was no increase in recurrence with less aggressive surgical management.