

Local therapy and quality of life outcomes in young women with breast cancer

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San Antonio Breast Cancer Symposium®, December 4 -8, 2018

Disclosures

- None

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Background

- More than 13,000 women ≤ 40 years of age are diagnosed with breast cancer each year
 - ~7% of new breast cancers diagnosed in the United States
- Despite equivalent local regional control and survival with breast conservation and mastectomy, rates of (bilateral) mastectomy are increasing in young women
 - 3.6% in 1998 \rightarrow 33% in 2011

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Anders Semin Oncol 2009
Kurian JAMA 2014
Aalders JCO 2016
Tuttle JCO 2007

Background

- Previous studies of women of all ages treated for breast cancer found no clinically meaningful differences in QOL related to surgical procedure
 - Some QOL domains improved after CPM
- Young women are at increased risk for poorer psychosocial outcomes following a breast cancer diagnosis and in survivorship
- Little is known about the impact of surgery, particularly in the era of increasing bilateral mastectomy, on QOL in young survivors

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Hwang JCO 2016
Koslow Ann Surg Onc 2013
Lebel Health Psychol 2013

Objectives

- Using a multicenter prospective cohort of young women with breast cancer, we sought to:
 - Evaluate differences in QOL among women who had breast conserving surgery (BCS), unilateral mastectomy and bilateral mastectomy
 - Identify demographic and treatment-related factors that impact QOL

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The Young Women's Breast Cancer Study (YWS)

- Multicenter, prospective cohort study
- 12 participating hospitals (academic and community)
- Established to explore *biological, medical and psychosocial issues* in breast cancer patients (≤ 40 years old at diagnosis)
- Open to enrollment: October 2006 – June 2016
 - 2162 women identified, 1302 consented to participate
 - Patients are followed with serial surveys
- Median age at diagnosis: 37 (17-40) years



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Methods

- This analysis used a cross-sectional study design
- BREAST-Q was administered to all eligible YWS participants in active follow-up in 2016-2017, either as a stand-alone survey or as part of their 10-year follow-up
- Median time from diagnosis to BREAST-Q completion: 5.8 (range: 1.9-10.4) years
- Demographics and treatment information were obtained from serial surveys and chart review

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BREAST-Q

- Six domains:
 - Satisfaction with breasts
 - Psychosocial well-being
 - Physical well-being
 - Sexual well-being
 - Overall outcome
 - Process of care

BREAST-Q

- Domains are scored independently
- Scores range from 0-100
 - Higher scores = better QOL
- Minimal important difference
 - Small: 2-3 points
 - Moderate: 4-7 points
 - Large: 8-10 points

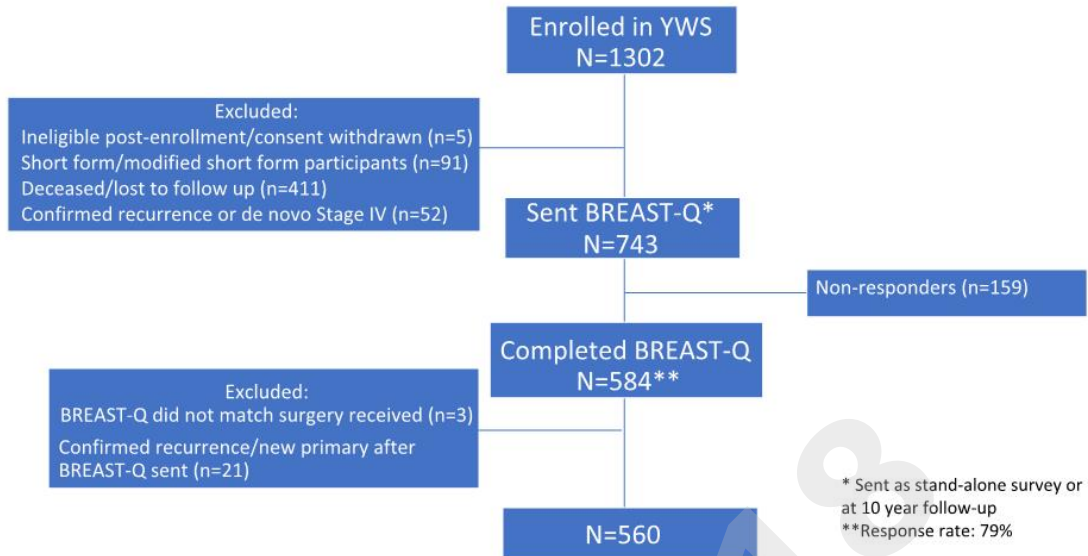
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Pusic Plast Reconstr Surg 2009
Pusic unpublished data

Analysis

- Mean BREAST-Q scores for each domain were compared across surgical procedures
- Univariate and multivariate linear regression models were used to identify predictors of BREAST-Q domain scores

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Patient and Treatment Characteristics

	N=560 (%)
Caucasian Race	506 (90%)
BMI >=25	179 (32%)
Married	429 (77%)
Financial status comfortable	445 (79%)
Works full time	344 (61%)
Education college graduate or higher	479 (86%)
Stage	
0	54 (10%)
1	214 (38%)
2	216 (39%)
3	76 (14%)
Chemotherapy	406 (72%)
Endocrine therapy	372 (66%)

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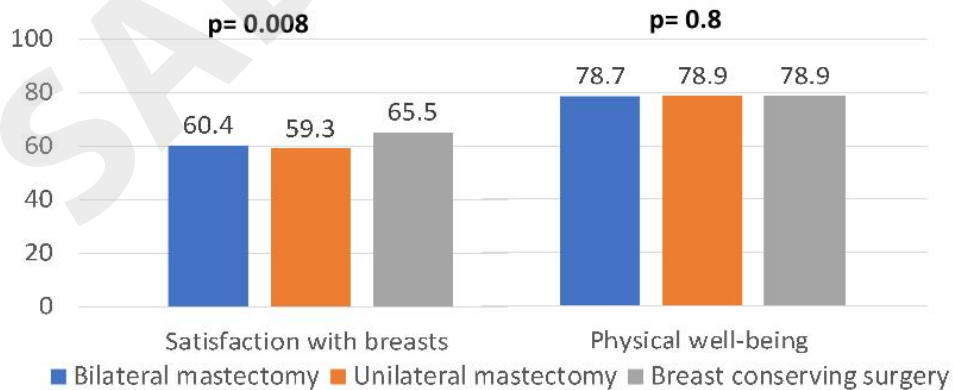
Local Therapy Characteristics/Sequelae

	N=560 (%)
Surgery	
Breast conserving surgery (BCS)	160 (28%)
Unilateral mastectomy	110 (20%)
Bilateral mastectomy	290 (52%)
Reconstruction (n=400)	
No reconstruction	42 (11%)
Implant based reconstruction	276 (69%)
Flap reconstruction	49 (12%)
Unknown/other	33 (8%)
Radiation	
BCS (n=160)	159 (99%)
Postmastectomy radiation (n=400)	181 (45%)
Lymphedema at 1 year*	163 (29%)

*Self report of any lymphedema at 1 year included as exposure due to potential impact on QOL

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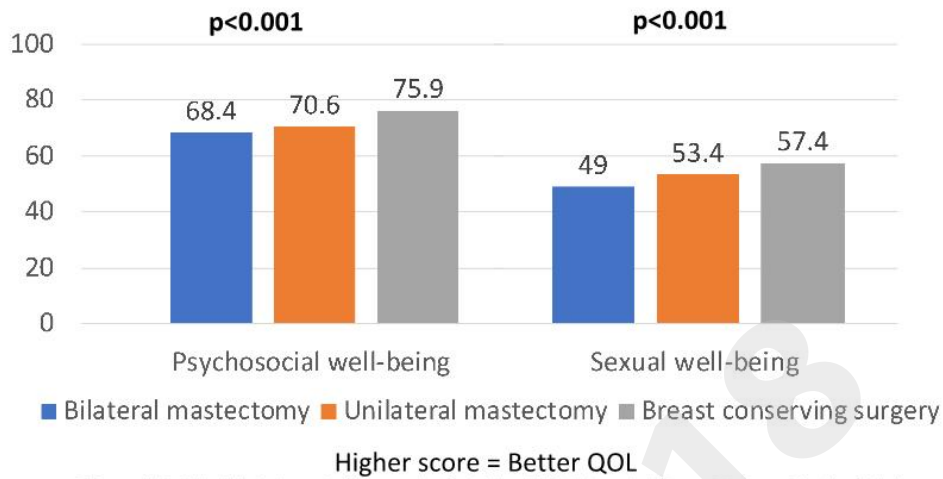
BREAST-Q Mean Scores



Higher score = Better QOL

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BREAST-Q Mean Scores



Multivariate Analysis: Satisfaction with Breasts

	β^* (95% CI)	P-value**
Surgery factors:		
Unilateral mastectomy vs. BCS	-8.7 (-13.1, -4.3)	<0.001
Bilateral mastectomy vs. BCS	-9.3 (-14.4, -4.2)	<0.001
Other treatment factors:		
Radiation: Yes vs. No	-7.5 (-11.3, -3.6)	<0.001
Patient factors:		
Financial status: Uncomfortable vs. comfortable	-5.4 (-9.8, -1.0)	0.02

* β Difference in BREAST-Q score

**Not significant for age, race, marital status, work status, education level, stage, chemotherapy, endocrine therapy, time since surgery, lymphedema

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Multivariate Analysis: Physical Well-Being

	β^* (95% CI)	P-value**
Surgery factors:		
Lymphedema: Yes vs. No	-6.4 (-9.1, -3.8)	<0.001
Patient factors:		
Financial status: Uncomfortable vs. comfortable	-4.8 (-8.0, -1.6)	0.004
Time since surgery: >5 years vs. 1-5 years	6.0 (3.6, 8.4)	<0.001

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Multivariate Analysis: Psychosocial Well-Being

	β^* (95% CI)	P-value**
Surgery factors:		
Unilateral mastectomy vs. BCS	-8.3 (-13.7, -3.3)	0.001
Bilateral mastectomy vs. BCS	-10.5 (-15, -6.1)	<0.001
Other treatment factors:		
Radiation: Yes vs. No	-6.0 (-10, -2.0)	0.003
Patient factors:		
Financial status: Uncomfortable vs. comfortable	-7 (-11.6, -2.4)	0.003
BMI: <18.5 vs. 18.5-24.9	-0.9 (-9.2, 7.4)	0.83
BMI: \geq 25 vs. 18.5-24.9	-4.2 (-8.0, -0.52)	0.03

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Multivariate Analysis: Sexual Well-Being

	β^* (95% CI)	P-value**
Surgery factors:		
Unilateral mastectomy vs. BCS	-3.7 (-8.8, 1.4)	0.15
Bilateral mastectomy vs. BCS	-8.1 (-12.2, -4.1)	<0.001
Patient factors:		
Financial status: Uncomfortable vs. comfortable	-6.8 (-11.5, -2.2)	0.004
BMI: <18.5 vs. 18.5-24.9	1.7 (-6.7, 10.2)	0.68
BMI: \geq 25 vs. 18.5-24.9	-5.3 (-9.1, -1.6)	0.006
Lymphedema: Yes vs. No	-3.8 (-7.1, 0.0)	0.05

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Limitations

- One time survey of women enrolled in an observational cohort study
 - Preoperative QOL likely drives surgical choices
- Findings may have limited generalizability to more diverse populations
 - Majority of participants are white and of a high socio-economic status

Conclusions

- Local therapy decisions are associated with a persistent impact on QOL in young breast cancer survivors
- Compared to BCS, unilateral or bilateral mastectomy is associated with significant decreases in QOL domains for:
 - Satisfaction with breasts
 - Psychosocial well-being
 - Sexual well-being

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Conclusions

- Financial distress was associated with lower scores across all 4 BREAST-Q domains
 - Socio-economic stressors likely contribute to poorer QOL
- Ongoing analyses are exploring the following:
 - Impact of genetic mutation status
 - Among mastectomy patients:
 - Impact of breast reconstruction
 - Impact of PMRT
- Knowledge of the potential long term impact of surgery on QOL is of critical importance for counseling young women about surgical decisions

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