

# The impact of breast cancer surgery on quality of life: Long term results from E5103

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## Disclosures

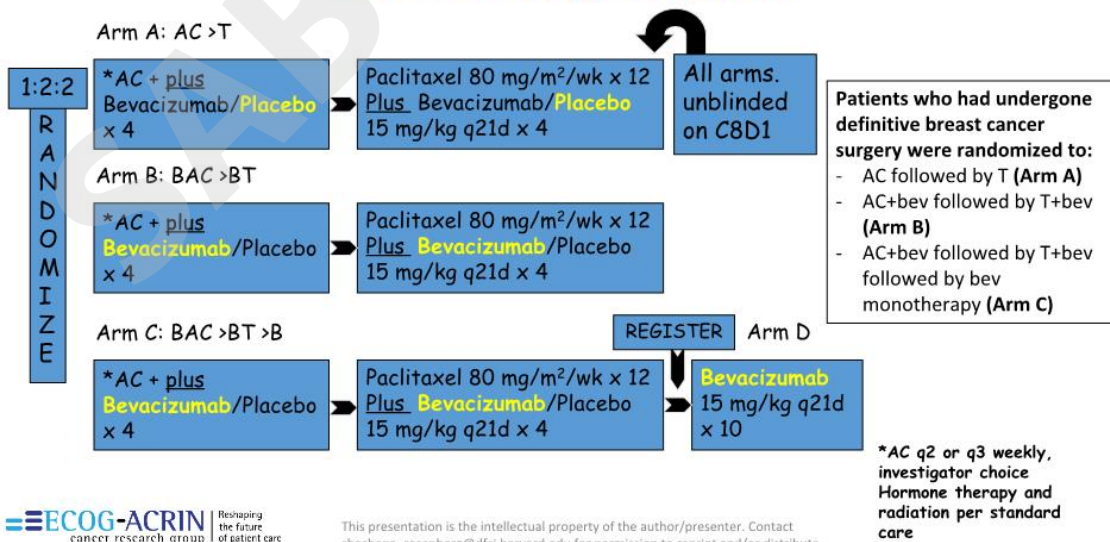
I have no relevant disclosures



# ECOG-ACRIN E5103

- Double-Blind Phase III Trial of Adjuvant Chemotherapy With and Without Bevacizumab in Patients With Lymph Node–Positive and High-Risk Lymph Node–Negative Breast Cancer
- 4,994 patients enrolled between November 2007-February 2011

## E5103 Study Schema



## E5103: Primary Objective

- **Primary objective:** Determine if the addition of bevacizumab improves disease free survival
- **Results:** Addition of bevacizumab did not improve invasive disease free survival or overall survival

## E5103: Decision Making-QoL Component

- All patients enrolled between January 2010 and June 2010 participated in the Decision Making – Quality of Life (DM-QoL) Component
- As part of the DM-QoL Component, telephone-based surveys were administered at baseline, ~22 weeks, 12 months, and 18 months post-enrollment

## E5103: DM-QoL Objectives

- **Primary (pre-specified) objective:** To compare the QoL of patients randomized to receive AC+paclitaxel with either bevacizumab or placebo at 18 months post-enrollment
  - **Hypothesis:** Patient-reported physical/psychological symptoms will not differ between the bevacizumab and placebo arms
- **Secondary (post-hoc) objective:** To explore the impact of breast conserving surgery (BCS) vs. mastectomy on QoL at 18 months post-enrollment

## Measures of QoL: EQ-5D-3L

- **Dimensions:** 1)mobility; 2)self-care; 3)usual activities; 4)pain/discomfort; 5)anxiety/depression
- **Health profile evaluation:** % reporting no problems vs. any problems
- **Index score:** -0.11(death)-1(perfect health)
  - minimally important difference: 0.06 points
- **Visual Analog Score (VAS):** 0(worst imaginable)-100(best imaginable)
  - minimally important difference: 7 points

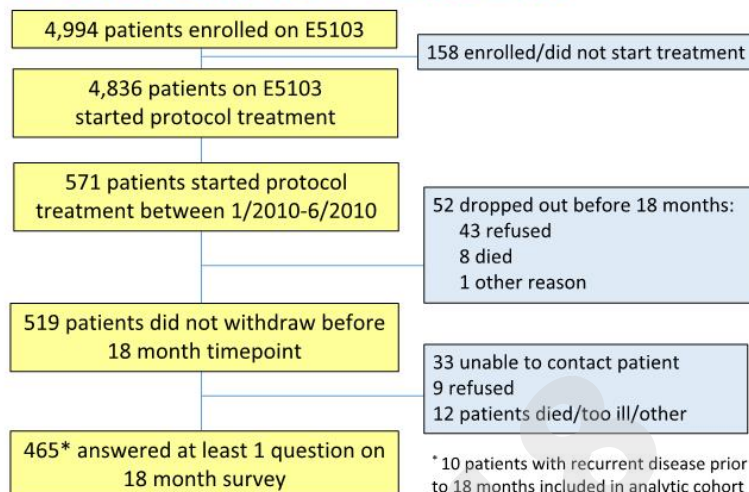
## Measures of QoL: FACT-B

- **FACT-B:** FACT-G + Breast cancer specific domain
  - **FACT-G:** 1)physical; 2)social/family; 3)emotional; 4)functional
  - **Breast cancer specific:** body image, sexual issues, additional physical symptoms
  
- **Overall FACT-B score:** 0-144; higher scores = better QoL
  - Minimally important differences:
    - Overall FACT-B: 7-8 points
    - FACT-G (domain dependent): ~1-3 points
    - Breast cancer specific domain: 2-3 points

## Analysis

- Fisher's exact/Wilcoxon rank sum/Kruskal-Wallis tests to compare categorical and continuous variables between:
  - Placebo vs. bevacizumab arms
  - Mastectomy vs. BCS
  
- Univariate and multivariate linear regression to evaluate primary surgery and overall FACT-B score

## E5103: DM-QoL CONSORT



## DM-QoL Patient Demographics\*

	Total (N=465)
Median age (range)	52 (25-76)
	N (%)
Female	462 (99)
White	401 (86)
Non-Hispanic	412 (94)
Married/partnered	311 (72)
Less than a college education	241 (55)
Postmenopausal	255 (56)

## DM-QoL Disease and Surgical Characteristics\*

	N (%)
ER and/or PgR positive	303 (65)
Node positive	336 (72)
Tumor Size >2 cm	298 (64)
Grade III	253 (56)
Surgery	
Breast Conserving Surgery	199 (43)
Mastectomy	266 (57)

\*At enrollment

## Primary QoL Analysis: Placebo vs. Bev

	Mean score*			p**
	<u>Arm A</u> Chemo+Placebo	<u>Arm B</u> Chemo+Bev	<u>Arm C</u> Chemo+Bev (extended)	
FACT-B	113	110	111	0.23
EQ-5D-3L Index	0.83	0.82	0.81	0.81
EQ-VAS	80	80	79	0.79

- QoL at 18 months across treatment arms not different
- All treatment arms were combined for subsequent QoL analyses

Minimally important differences:

FACT-B: 7-8 points

EQ-5D-3L Index: 0.06 points

EQ-VAS: 7 points

\*Higher scores=Better QoL

\*\*Kruskal-Wallis test p-value

## QoL analysis: BCS vs. Mastectomy

	Mean score*		p**
	BCS	Mastectomy	
FACT-B	114	109	0.01
EQ-5D-3L Index	0.84	0.80	0.04
EQ-VAS	82	78	<0.01

Minimally important differences:

FACT-B: 7-8 points

EQ-5D-3L Index: 0.06 points

EQ-VAS: 7 points

\*Higher scores=Better QoL

\*\*Wilcoxon rank sum test p-value

## EQ-5D-3L Health Profiles: BCS vs. Mastectomy

Dimension	% reporting problems at 18 months*		P**
	BCS	Mastectomy	
Mobility	23	23	1.00
Self-care	6	9	0.21
Usual activities	25	34	0.04
Pain/discomfort	53	61	0.08
Anxiety/depression	36	40	0.44

\*3L: 3 possible answers: 1) no problems 2) some/moderate problems 3) problems; responses then collapsed into no problems vs. any problems(=some/moderate problems and problems).

\*\* Fisher's exact test p-value.



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\*\* Fisher's exact test p-value.

## Individual FACT-B Domains: BCS vs. Mastectomy

Domain	Mean score*		P**
	BCS	Mastectomy	
FACT G: Physical	23	22	0.05
FACT G: Social/Family	24	23	0.27
FACT G: Emotional	20	19	0.06
FACT G: Functional	22	20	0.05
Breast Cancer Specific	26	24	<0.01

\*Higher scores=Better QoL  
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- Differences in scores favor BCS over mastectomy, with some statistically significant, although all differences, on average, of modest clinical significance

Minimally important differences:

**Physical:** 1-3 points  
**Social/Family:** 0.7 points  
**Emotional:** 1-2 points  
**Functional:** 1-3 points  
**BCS:** 2-3 points

\*Higher scores=Better QoL  
\*\*Wilcoxon rank sum test p-value

## Factors Associated with Lower Overall FACT-B scores at 18 months

	Univariate*		Multivariate*	
	coefficient	p	coefficient	p
<b>Non-white (vs. white)</b>	-6.3	0.03	-6.6	0.02

- The average FACT-B score for non-white women was >6 points lower than the average FACT-B score for white women

\* Age, tumor size, and nodal status not significant in univariate or multivariate analyses

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	Univariate*		Multivariate*	
	coefficient	p	coefficient	p
<b>Non-white (vs. white)</b>	-6.3	0.03	-6.6	0.02
<b>ER+ (vs. ER-)</b>	-4.4	0.04	-4.7	0.05

- The average FACT-B score for women with ER+ tumors was >4 points lower than the average FACT-B score for women with ER - tumors

\* Age, tumor size, and nodal status not significant in univariate or multivariate analyses

## Factors Associated with Lower Overall FACT-B scores at 18 months

	Univariate†		Multivariate*	
	coefficient	p	coefficient	p
Non-white (vs. white)	-6.3	0.03	-6.6	0.02
ER+ (vs. ER-)	-4.4	0.04	-4.7	0.05
<b>Mastectomy (vs. BCS)</b>	<b>-5.0</b>	<b>0.01</b>	<b>-3.8</b>	<b>0.06</b>

- The average FACT-B score for women who had a mastectomy was 5 points lower than the average FACT-B score for women who had BCS in the univariate model
- Difference attenuated (borderline significance) in multivariate model

\*Age, tumor size, and nodal status not significant in univariate or multivariate analyses

## Summary

- **Primary QoL analysis:**

The addition of bevacizumab, including among those who received extended duration therapy, did not negatively affect QoL at 18 months in women enrolled in E5103

- **Surgery and QoL analysis:**

There was a trend towards more extensive surgery being associated with poorer QoL, including more problems with usual activities and physical functioning, and breast cancer-specific QoL

## Limitations

- Findings regarding the differences in QoL between surgical treatment groups are observational; women were not randomized by surgery type
- Women who underwent mastectomy were likely different prior to study entry than women who underwent BCS

## Implications

- Given increasing rates of mastectomy, understanding the QoL impact of surgery is of critical importance
- Many of the problems reported by survivors are amenable to intervention, underscoring the need for timely referral to supportive resources, especially for underserved populations
- Attention to both physical and psychosocial health is essential during and after completion of active breast cancer treatment to optimize QoL

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27

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28