

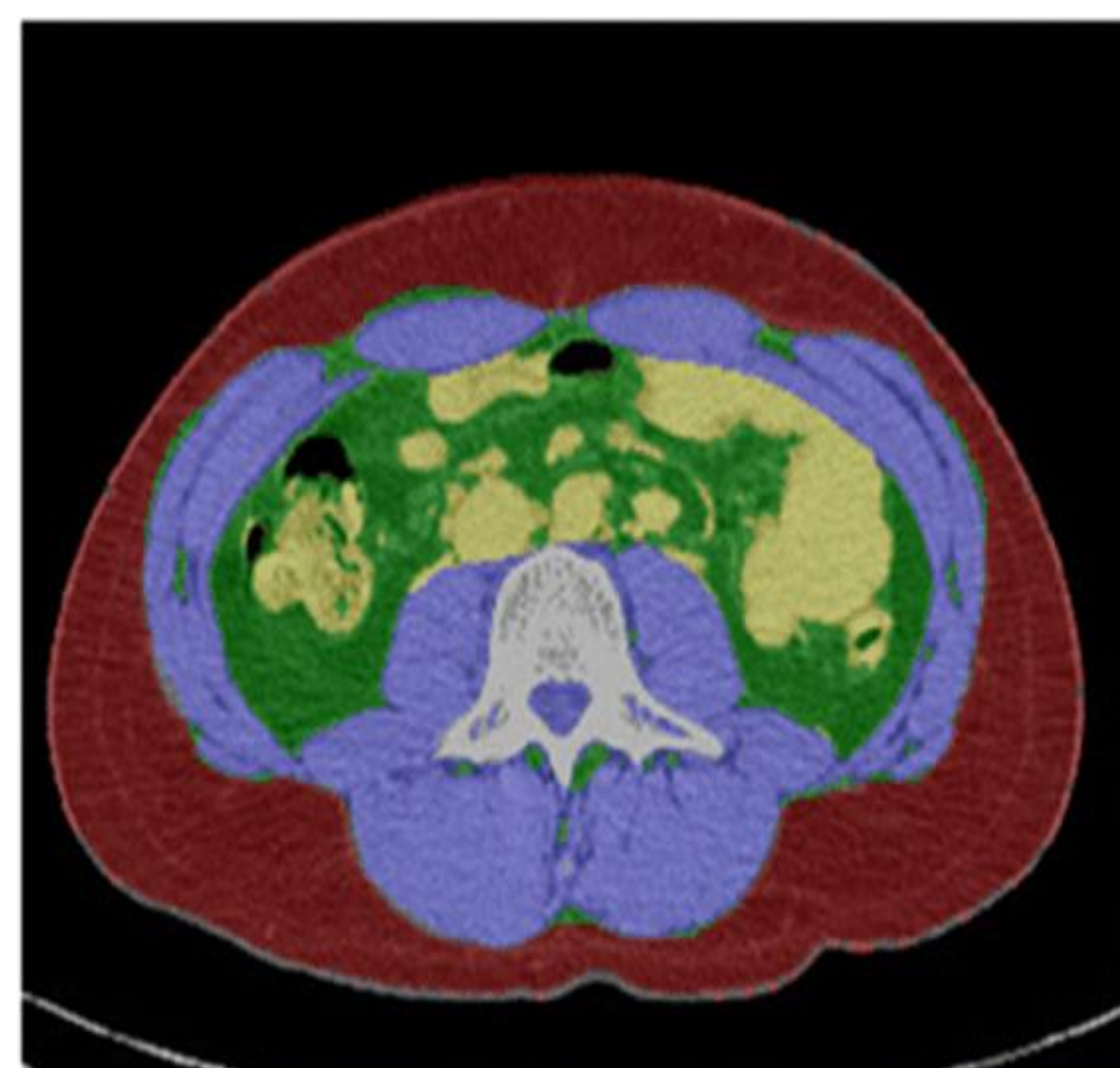
# LONGITUDINAL CHANGES IN BODY COMPOSITION DURING CHEMOTHERAPY AND OVERALL SURVIVAL IN YOUNG WOMEN WITH BREAST CANCER



**Atrium Health**  
Levine Cancer

Aynur Aktas<sup>1</sup>, Rebecca S. Greiner<sup>1</sup>, Matthew Flores<sup>1</sup>, Danielle Boselli<sup>1</sup>, Taylor J. Stone<sup>2</sup>, Lejla Hadzikadic-Gusic<sup>1</sup>, Anna Hecksher<sup>1</sup>, Chasse Bailey-Dorton<sup>1</sup>, Eric A. Wang<sup>2</sup>, Declan Walsh<sup>1</sup>  
<sup>1</sup>Department of Supportive Oncology, Atrium Health Levine Cancer, Charlotte, NC; <sup>2</sup>Charlotte Radiology, Charlotte, NC

## BACKGROUND



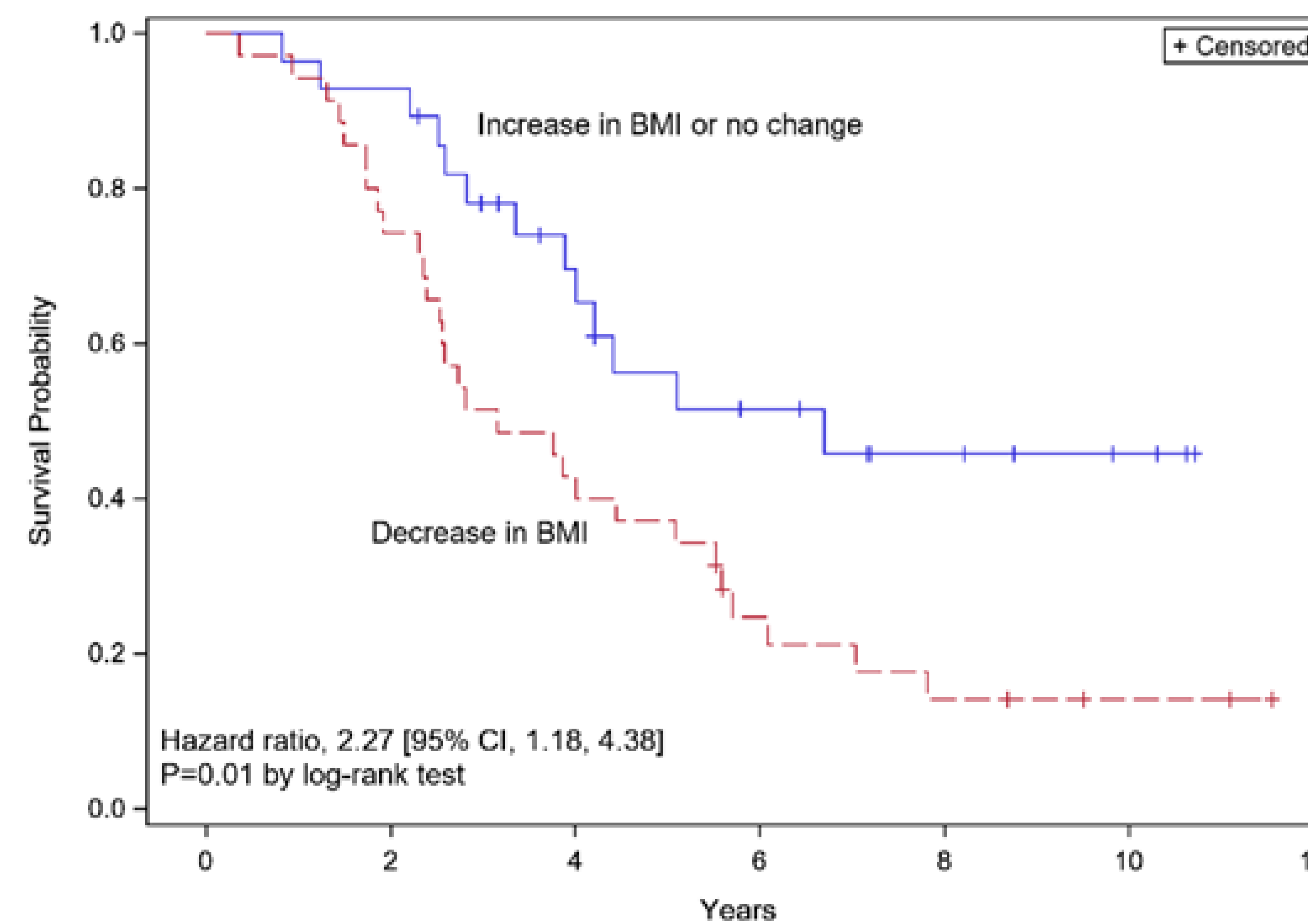
Given apparent importance of body composition in cancer populations and the scarcity of data on modifiable risk factors, we assessed the association of body composition measures, skeletal muscle mass quantity and quality, with prognosis in a cohort of young women with breast cancer

## METHODS

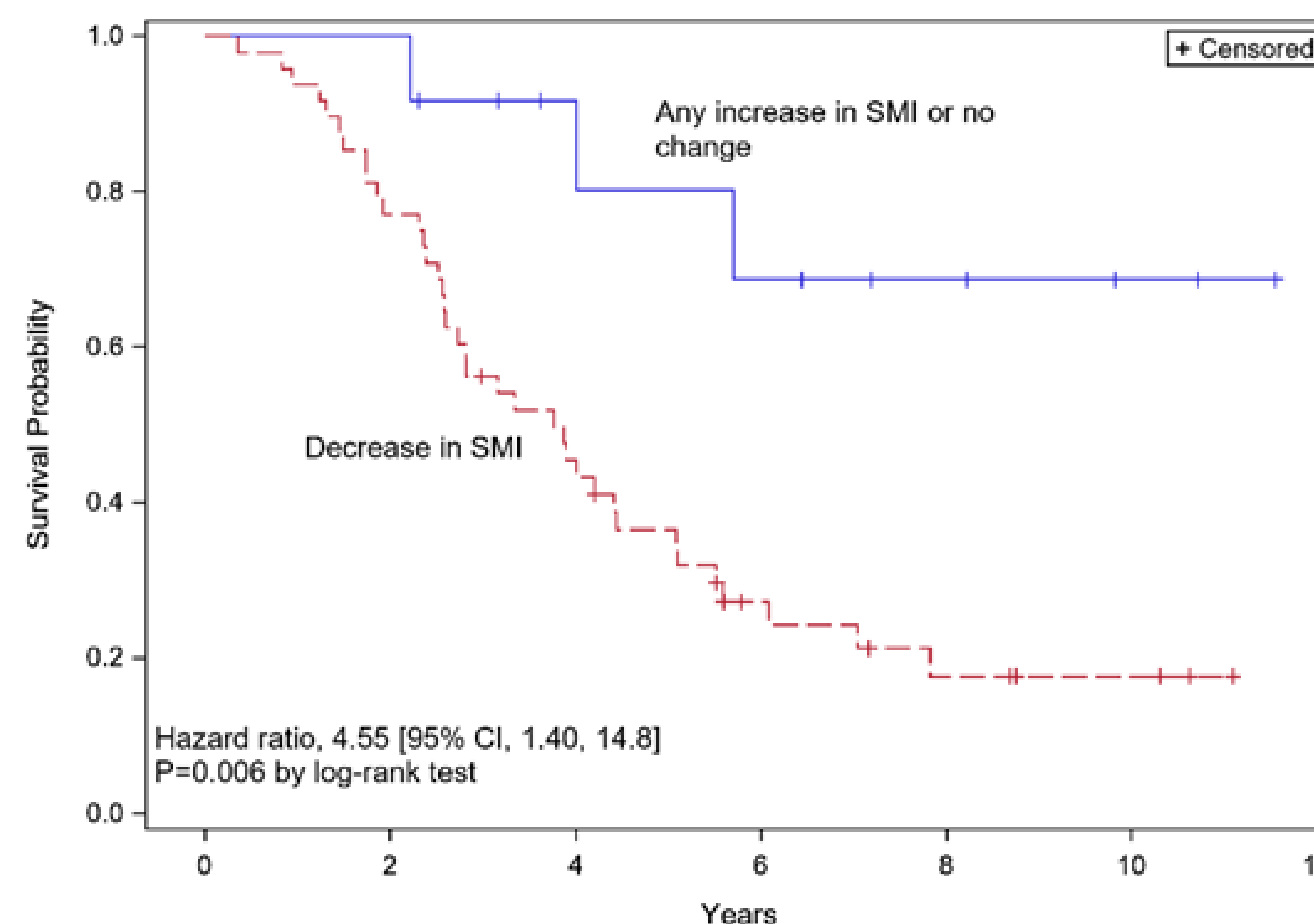
- Matched case-control study described body composition characteristics before, during, and after cancer treatment in young women with breast cancer
- The Sandra Levine Young Women's Breast Cancer Program was queried for women aged ≤40 at diagnosis (2009-2018) (N=870)
- Those with clinical Stage 0 disease, multiple primary sites, or undergoing treatment for other cancers were excluded
- Deceased patients with pre-treatment CT scans were identified (N=63) and matched (1:1) to those presumed alive at data abstraction (April 2020) by age, diagnosis year, and disease characteristics
- Skeletal muscle index (SMI) and intermuscular adipose tissue (corrected for height) (IMAT-C) were calculated from CT scans (L3) closest to diagnosis (T1), first disease assessment after initial treatment (T2), and death or last follow-up appointment (T3)
- Kaplan-Meier methods summarized OS. Univariate Cox proportional hazard models estimated associations of body composition characteristics and OS

## RESULTS

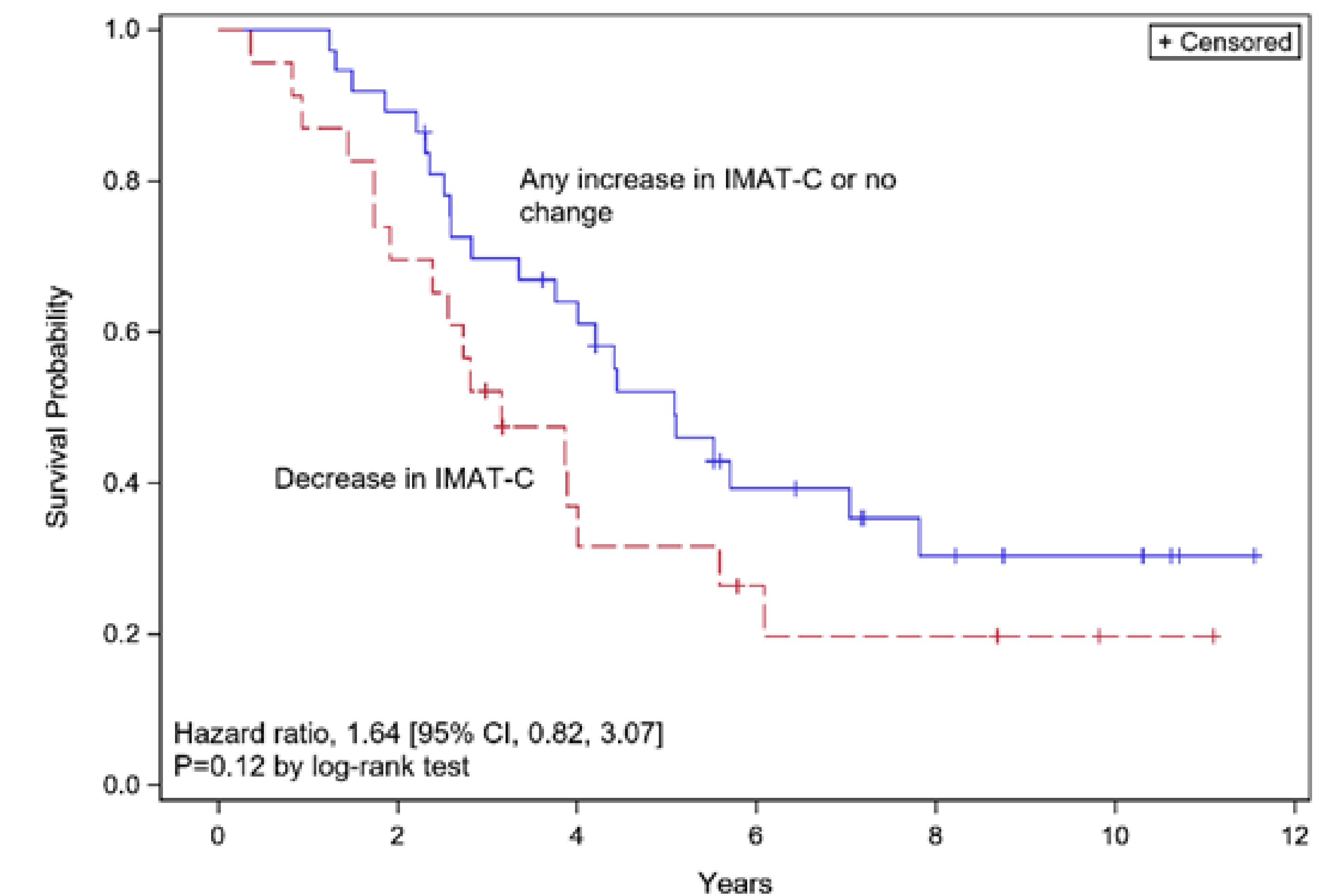
**Fig 1. Overall Survival and Body Mass Index**



**Fig 2. Overall Survival and Skeletal Muscle Index**



**Fig 3. Overall Survival and Intermuscular Adipose Tissue (corrected for height)**



Body Composition Characteristics (N=63)	
BMI ≥25 at diagnosis, N (%)	45 (71)
Change in BMI over 100 days, Median (Min, Max)	-.11% (-5.5%, 5.9%)
Change in SMI over 100 days, Median (Min, Max)	-1.1% (-12.9%, 1.7%)
Change in IMAT-C over 100 days, Median (Min, Max)	1.1% (-53.9%, 24.6%)

## CONCLUSIONS

1. Decrease in BMI and SMI were observed across all time points
2. Lower muscle quantity predicted shorter OS; muscle density did not

Aynur Aktas, MD

