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Frailty among long-term breast cancer survivors

Introduction: Breast cancer (BC) survivors have a higher prevalence of frailty than cancer-free women. However, whether frailty status differs by cancer characteristics, treatments, and lifestyles needs further investigation. This study aims to evaluate the association of frailty with clinical characteristics, treatments, and adherence to the American Cancer Society (ACS) Nutrition and Physical Activity Guideline for Cancer Survivors among BC survivors.

Methods: This study included 319 women aged ≥ 40 with a BC history recruited at Vanderbilt University Medical Center who completed a survey collecting information on demographics, lifestyles, disease history, and current health/functional status. Based on a 56-item cumulative deficit index, frailty status was categorized as robust (≤ 0.2), pre-frail ($0.2 < \leq 0.35$), and frail (> 0.35). The association of frailty status with BC clinical characteristics, cancer treatment, and adherence to the guideline were assessed using multinomial logistic regression models with adjustment for age at survey, follow-up duration, baseline comorbidity, demographics, and menopausal status.

Results: At a median of 12 years after BC diagnosis, 26% and 13% of BC survivors (mean age 64) were pre-frail and frail. After multivariable adjustment, patients diagnosed with stage III/IV (vs I) and high-grade (vs low-grade) BC had an elevated risk for frailty, with odds ratios (OR) and 95% confidence intervals (CI) of 6.77 (1.02, 45.13) and 4.36 (1.28, 14.83), respectively. Radiation therapy was associated with increased odds of pre-frailty among BC survivors aged 40-65 (OR=4.94, 95% CI=1.67, 14.59). Triple-negative BC was associated with increased odds of pre-frailty among BC survivors surveyed < 12 years after diagnosis (OR=3.47, 95% CI=1.04, 11.57). Adherence to the ACS guideline is associated with 74% reduced risk for pre-frailty (OR=0.26, 95% CI=0.09, 0.76).

Conclusions: This study addresses the high prevalence of frailty among certain BC survivors and the importance of adherence to the ACS guideline for cancer survivors in eliminating pre-frailty and frailty.