Frailty in Older Breast Cancer Survivors: Age, Prevalence, and Associated Factors

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Older women (aged 65 years and older) constitute the largest group of breast cancer survivors (BCSs) in the United States (Howlader et al., 2012). More than 1.6 million U.S. women aged 65 years and older are BCSs (Centers for Disease Control and Prevention, 2011). Long-term problems reported by BCSs, such as cognitive difficulty, neuropathy, osteoporosis, muscle weakness, weight loss, slow walking speed, and fatigue, may be similar to those of older women without cancer, but may begin at an earlier age (Clough-Gorr, Stuck, Thwin, & Silliman, 2010; Klepin et al., 2010; Maccormick, 2006). A useful approach may be to consider the long-term effects of cancer and cancer treatment as accelerated aging, or early-onset frailty (Maccormick, 2006).

Frailty is an overall weakened physiologic state usually associated with advanced age (Fried et al., 2001). A measurable frailty phenotype model was proposed by Fried et al. (2001) that has been widely adopted in geriatric research and practice. The frailty phenotype is a conceptual cycle of inactivity and increasing weakness that cascades into eventual disability and dependence. Fried et al. (2001) proposed five criteria to measure frailty (unintentional weight loss, exhaustion, weakness, slow walking speed, and low physical activity) and demonstrated that older adults with at least three of the five criteria were at increased risk for worsening mobility, hospitalization, and death. Frailty, as measured by the frailty phenotype, has been strongly associated with older age, hospitalization, development of disability, reduced cardiac and pulmonary function, and reduced exercise capacity in older adults without cancer (Avila-Funes et al., 2008; Bandeen-Roche et al., 2006; Boyd, Xue, Simpson, Guralnik, & Fried, 2005; Fernandez-Bolanos et al., 2008; Santos-Eggimann, Cuénoud, Spagnoli, & Junod, 2009; Szanton, Seplaki, Thorpe, Allen, & Fried, 2010; Weiss, Hoening, Varadhan, Simonsick, & Fried, 2010; Wong et al., 2010; Woo, Chan, Leung, & Wong, 2010).

Cancer survivors are not yet known to be measurably more frail than other adults of the same age because frailty...