Cardiometabolic Health Among Cancer Survivors: A 13-Week Pilot Study of a Combined Aerobic and Resistance Training Program

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Purpose/Objectives: To explore the feasibility of combined aerobic and resistance training (CART) as a safe method of improving cardiometabolic health among cancer survivors.

Design: Descriptive and longitudinal pilot study for exercise intervention.

Setting: University campus in Los Angeles, California.

Sample: A multiethnic population of cancer survivors (N = 11) was recruited by convenience sampling and physician referral.

Methods: Consenting participants were prescribed CART for one hour per day, three days per week for 13 weeks.

Main Research Variables: Components of cardiometabolic health were measured, including resting heart rate (HR_{rest}), blood pressure, body mass index, waist circumference, body fat percentage, and android fat percentage at baseline and after 13 weeks of training. Fasting blood glucose, insulin, adiponectin, leptin, tumor necrosis factor alpha, and C-reactive protein (CRP) also were assessed at baseline and after 13 weeks of training.

Findings: More than half of the participants reported living with at least two other chronic diseases or conditions in addition to a cancer diagnosis. Five of six African American and Hispanic participants reported the presence of at least two risk factors for metabolic syndrome, compared to one of five Caucasian participants. After 13 weeks of training, participants experienced an average decrease in waist circumference. Decrease in waist circumference was associated with a decrease in CRP. A relationship also was suggested between number of exercise sessions attended and improvement in HR_{rest}.

Conclusions: A CART intervention among cancer survivors should continue to be explored in a larger sample to establish efficacy and effectiveness at improving cardiometabolic health. Because of the higher risk of comorbidity among cancer survivors in comparison to cancer-free adults, improving cardiometabolic health is as important as monitoring cancer recurrence. A need exists for increased attention to the post-treatment cardiometabolic health of cancer survivors and also for examining potential cardiometabolic health disparities among non-Caucasian cancer survivors.

Implications for Nursing: CART may be a plausible alternative to reduce the risk of metabolic syndrome and improve cardiometabolic health among cancer survivors. Additional studies that continue to explore the efficacy and effectiveness of CART may provide more information to help nurses and physicians determine whether the cancer survivorship care plan should include an exercise-based alternative to intervene on cardiometabolic health.

Early detection through cancer screening and the increased efficacy of cancer treatments have improved the chances of survival among patients with cancer (Siegel et al., 2012). As of 2014, the estimated prevalence of cancer survivors in the United States was 14.5 million, with about 64% being considered 5-year survivors and 15% being considered 20-year survivors (DeSantis et al., 2014). Cancer survivors are living longer but with a greater comorbid burden than similarly aged individuals without cancer.