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Comprehensive Effects of Prolonged Structured Exercise on Fitness, Body Composition, and Quality of Life in Cancer Patients

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Purpose: Cancer and its treatments frequently induce detrimental alterations in body composition, which adversely affect patients'prognosis and quality of life (QoL). This study investigated the impact of exercise on body composition, physical fitness, and QoL in patients living with cancer.
Methods: Patients with solid cancers treated at the University Hospital of Verona enrolled in a 9-month structured program, held twice per week and organized into 3 macrocycles (M): M1 with progressive moderate-intensity aerobic exercise and resistance training; M2 with high-intensity interval training (HIIT) and circuit-based resistance training; and M3 with HIIT and machine-based resistance training. Safety and feasibility were monitored during the intervention. Body composition was assessed via bioelectrical impedance ; cardiorespiratory fitness using the 6-minute walk test (6MWT); muscle strength and endurance with handgrip strength and the 30-second chair stand, respectively. QoL was measured using the EORTC QLQ-C30 questionnaire. Assessments were performed at baseline, at 3, 6, and 9 months. Data were analyzed using descriptive statistics and repeated-measures ANOVA.
Results: Twenty-nine, and 16 patients completed 6 and 9 months of intervention, respectively. Breast and pancreatic cancer were the most common cancer types; 40% had a metastatic disease, and 64% were undergoing treatments. Body composition and strength did not change significantly over the months, whereas waist circumference decreased by 3% after 6 months ($p = 0.018$). Significant improvements in 6MWT at 6 (+10.5%, $p < 0.001$) and 9 months (+12.6%, $p < 0.001$) were observed, as well as in muscular endurance (+25%, $p < 0.001$; +22%, $p < 0.001$). About QoL, improvements in emotional functioning and reductions in insomnia were also detected.
Conclusions: Despite minimal changes in body composition, a prolonged supervised exercise program produced significant benefits for cardiorespiratory fitness, muscular endurance, and QoL among patients with cancer.

Keywords

Exercise; Body composition; Physical fitness; Macrocycles

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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