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Effectiveness of implementing a supervised physical exercise program in the clinical care of patients with lung cancer

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INTRODUCTION:Patients with lung cancer often experience treatment-related physical deterioration, including reduced cardiorespiratory capacity, muscle strength, and functional performance, as well as unfavorable changes in body composition, negatively affecting quality of life.

OBJECTIVE:To analyze the effects of a supervised exercise program implemented in a community setting for patients with lung cancer, and to examine differences in response between patients with and without metastatic disease.

METHODS: A pre–post study without a control group was conducted at the AECC Exercise Unit (Madrid, 2021–2025). Participants underwent an individualized, supervised, moderate-to-vigorous concurrent training program. Functional capacity was assessed using the 30-Second Sit-to-Stand Test; maximal strength through bench press and leg press; cardiorespiratory fitness via estimated VO_2max from a submaximal treadmill test; and body composition using bioelectrical impedance analysis. Physical activity levels and quality of life were evaluated with validated questionnaires (IPAQ, FACT-G, FACT-F, EQ-5D-5L). Data normality was assessed, and pre–post differences were analyzed using paired t-tests or non-parametric equivalents. Comparisons between metastatic and non-metastatic patients were performed using independent t-tests. Statistical significance was set at $p < 0.05$.

RESULTS: Thirty-nine patients participated, with a mean attendance rate of 79.8%. Mean age was 59.5 ± 8.9 years, and 65% had metastatic disease. Significant improvements were observed post-intervention in VO_2max (+8.1 ± 4.8 ml/kg/min), upper-body strength (+11.9 ± 6.9 kg), lower-body strength (+29.9 ± 20.2 kg), and functional performance (+5.9 ± 3.5 repetitions) (all $p < 0.001$). Fat mass and visceral fat area decreased significantly, while phase angle increased, with no significant changes in body weight or muscle mass. No differences were found between metastatic and non-metastatic patients.

DISCUSSION AND CONCLUSIONS:An eight-week supervised community-based exercise program was feasible and effective in improving physical fitness, functional capacity, and body composition in patients with lung cancer, regardless of disease stage, supporting its integration as a complementary therapeutic strategy.

Keywords

physical exercise, lung cancer, community framework, advanced disease.

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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