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Feasibility of Exercise Training in Patients with Advanced Colorectal Cancer During Chemotherapy: Clinical Parameters and Functional Capacity in an Exercise-Oncology Clinical Trial

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Background

Patients with advanced colorectal cancer frequently present impairments in clinical parameters and physical function even before initiating chemotherapy, which raises concerns about their participation in an exercise training program. Baseline characterization is essential for designing individualized and feasible exercise interventions and understanding how initial physiological status may influence treatment tolerance and adaptations to training.

Objective

To describe baseline clinical and functional characteristics of a cohort of adults with advanced colorectal cancer (ACRC) (Stages III and IV) enrolled in an exercise-oncology trial prior to chemotherapy.

Methods

Before any treatment or exercise intervention, participants undergo a standardized assessment protocol that includes: Clinical Parameters: 1) Symptoms (MD Anderson Symptom Inventory) and 2) Inflammatory Status (Total leukocyte count); and Functional Capacity: 1) Physical Performance (Eastern Cooperative Oncology Group (ECOG) Scale), 2) Muscle Strength (Maximum Isometric Knee Extension Strength), and 3) Cardiorespiratory Capacity (Six-minute walk test).

Descriptive statistics were used to analyze the data, considering $p < 0,05$ for significant differences.

Results

Ten participants (mean age: 62.8 ± 10.9 years) completed the baseline assessment protocol with no adverse events. Assessments showed that patients did not have significant inflammation (mean leukocytes 8.701 ± 2.616 μL) before chemotherapy and that symptoms were mild (1.46 ± 0.83). Regarding functional parameters, cardiorespiratory capacity was 38% below the value predicted by their age ($p < 0,05$). However, maximum knee extension strength (2.78 ± 0.7 Nm/kg) was significantly above reference values (1.33 Nm/kg), corroborating the data obtained with the ECOG (score between 0 and 2), which classifies all patients as fit to begin a physical training protocol.

Conclusion

Our preliminary data show that, despite advanced cancer, patients have clinical and functional conditions to engage in an exercise training program. Furthermore, appropriate exercise training can potentially contribute to improve the reduced cardiorespiratory capacity, in addition to contributing to the maintenance of functionality, even during chemotherapy.

Keywords

advanced colorectal cancer, chemotherapy, functional capacity, exercise training

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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