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RETOS: Personalized Community-Based Physical Activity and Behavior Change Intervention in Lung Cancer Survivors Receiving Immunotherapy: A Pilot Study

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Background: Patients with non-small cell lung cancer (NSCLC) receiving immunotherapy typically present low levels of physical activity and high sedentary behavior, negatively affecting health outcomes and quality of life. Conventional exercise programs often show poor long-term adherence, highlighting the need for community-based and patient-centered models that align with individual preferences and capacities.

Objective: To compare the effects of a personalized community-based exercise intervention versus usual care on physical activity levels and sedentary behavior in NSCLC survivors undergoing long-term immunotherapy.

Methods: A randomized controlled pilot trial (1:1; NCT06234735) was conducted in adults with metastatic NSCLC receiving immunotherapy. Thirty participants were included (control group [CG]: n=17; intervention group [IG]: n=13). Inclusion criteria comprised age 18–75 years, at least 12 months since initiation of immunotherapy, and active treatment or follow-up. The CG received general lifestyle advice, while the IG participated in a 6-month therapeutic exercise program combining face-to-face and online supervised sessions via the RehBody™ platform. The intervention included personalized goals, weekly challenges delivered through a private WhatsApp group, and exercise intensity monitoring using a heart rate sensor (POLAR Verity Sense™). Outcomes were assessed pre- and post-intervention using the IPAQ, SBQ, 6-minute walk test (6MWT), 1-minute sit-to-stand test (STS-1min), FACIT-F, EORTC QLQ-C30 and LC13, and PSQI. Statistical analyses included ANCOVA models and between-group comparisons of change scores.

Results: The community-based exercise intervention led to significant improvements in physical activity levels and reductions in sedentary behavior compared to usual care. The IG also demonstrated increased walking distance (6MWT) and a higher number of repetitions in the STS-1min test. Adherence to the program was high, with excellent compliance.

Conclusions: A combined face-to-face and online community-based therapeutic exercise program is feasible and effective in improving physical activity, reducing sedentary behavior, and enhancing functional capacity in NSCLC patients , with high adherence over time.

Keywords

lung cancer , intervention trial, physical activity, community intervention

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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