

Feasibility, safety, adherence and efficacy of high-intensity interval training and moderate-intensity continuous training on functionality and quality of life in COVID-19 (COVIDEX) survivors: Phase I randomized clinical trial

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Introduction: The ability of high-intensity interval training to increase functional capacity and ventricular, endothelial and pulmonary functions makes it a potential protagonist in the treatment of COVID-19 survivors. To confirm this hypothesis, Foged and colleagues (2013) carried out a randomized crossover clinical trial. In this study, they concluded that high-intensity interval training appears to be tolerable and safe, highlighting the need for more studies on the topic. **Objective:** The objective of this study was to compare high-intensity interval training (HIIT) with moderate-intensity continuous training (MICT) in terms of feasibility, safety, adherence and short-term effectiveness in improving functionality and quality of life in survivors of COVID-19. **Methods:** COVIDEX is a phase I, unicentric, randomized clinical trial, with two parallel groups, with an allocation rate of 1:1, conducted in the rehabilitation sector of the Post-COVID Center of the Hospital Especializado Octávio Mangabeira (HEOM). After the assessment procedures, patients were randomized and allocated in a random, sequential, simple manner, using opaque and sealed envelopes, into the HIIT and MICT groups. The allocation was carried out confidentially by a researcher who was independent of the study. Blinding was extended to those responsible for data evaluation and analysis procedures. However, due to the nature of the interventions, it was not possible to blind the researchers responsible for the interventions nor the participants. The repeated measures ANOVA test was used to analyze intragroup and intergroup differences. Feasibility, safety and adherence analysis was carried out descriptively using simple count and proportion data. The significance level was set at 5% with a 95% CI. All study analyzes were performed according to the intention-to-treat principle. GraphPad Prism version 8.0.1.3 was used. **Results:** 30 participants were eligible, with a 100% consent rate, where 15 were randomized to the HIIT group and 15 to the MICT group. No adverse effects were reported in either group. Adherence was 8 (92%) and 7 (81%) in the HIIT and MICT groups, respectively. There was no intragroup or intergroup efficacy for all outcomes analyzed (functionality and quality of life). **Conclusions:** Our study did not demonstrate differences between the two protocols in terms of feasibility, safety, adherence and short-term effectiveness in improving functionality and health-related quality of life in COVID-19 survivors. However, HIIT proved to be an option viable, safe and with good adherence, especially when prescribed through CPET.