

Early Rehabilitation in Cardiology - Heart Failure (ERIC-HF) program: multicenter randomized controlled trial

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Introduction

Decompensated Heart Failure (HF) patients are often characterized by functional dependence and impairment of performance in activities of daily living. This patients can benefit with a structured intervention - aerobic exercise training (AET), to optimize their functional capacity, increase of exercise tolerance and promote a better lifestyle. Although the benefits, AET is not yet validated for inpatients. ERIC-HF (early rehabilitation in cardiology – Heart Failure) is an AET program designed to HF inpatients

Purpose

To evaluate the feasibility, safety, impact on functional capacity and reproducibility of ERIC-HF program

Methods

Ongoing multicenter randomized single-blind controlled trial developed in 8 cardiology wards. Data include cardiovascular history, HF history and two functional tools: London Chest of Daily Living Activities (LCADL) and Barthel Index (BI). Training Group (TG) patients perform the ERIC-HF program twice a day for 5 days a week. ERIC-HF program is a supervised AET program, with increasing levels of intensity, divided into 5 stages (respiratory training, cycloergometer training, gait training and climbing stairs). Vital signs and Borg Modified Percieved Exertion (BMPE) are evaluated before and immediately after the exercise. Control Group (CG) patients perform physical activity in accordance with the guidelines, always supervised too. At discharge, all patients are evaluated with LCADL, BI and a 6-minute walking test (6MWT). The study was published in clinicaltrials.gov, Identifier: NCT03838003.

Results

Until now, 174 patients are randomized, 95 in TG and 79 in CG with an average of age of 71 (± 11) years old, 96 are male, 76% are in NYHA class III, 28 have diabetes and 54 have resynchronization therapy. At admission, both groups have the same level of functional dependence according to LCADL and BI scores. TG patients performed a total of 1223 session of exercise with an average of 14 sessions each, for 14 (± 12) days of hospitalization. About 32% of patients reached the final stage of the program – climbing stairs. At discharge, TG patients presented lower LCADL score, higher BI score and a 47 meters difference on the 6MWT ($p=0,003$) which represents a better functional capacity. Adverse events registered are: BMPE superior to 7 in 65 sessions of exercise, new onset of atrial fibrillation in 14 sessions, transitory precordial pain in 4 sessions and fall of systolic blood pressure after exercise in 210 sessions

Conclusions

The ERIC-HF program demonstrated, until now, to promote functional capacity. Regarding safety, we can infer that the few adverse events registered aren't major, and does not represent that exercise can be deleterious for decompensated HF patients, however more research should be done. We can also infer that probably AET is safe and viable, for HF patients and must be encouraged. Reproducibility was validated too. No other study of our knowledge has demonstrated this findings.

