
POSTER ABSTRACT

Effectiveness of an exercise programme to improve the quality of life of patients with heart failure in primary care: The EFICAR study

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Introduction (comprising background and problem statement): The current recommendations for exercise in heart failure (HF) do not provide clear guidelines in regard to type, intensity, duration and frequency of it. The aim of this study was to evaluate the effectiveness of a new exercise programme (EFICAR) in primary care, for people with HF, compared to the recommended optimal treatment, to improve HRQoL and functional capacity along 12 months.

Theory/Methods: Multicenter clinical trial, conducted in 7 public primary care centers in coordination with cardiology and hospitals. Patients with HF in NYHA class II-IV and depressed left ventricular ejection fraction $\leq 50\%$, functional capacity ≥ 4 metabolic equivalents (METs) and ≤ 85 years were randomly assigned to EFICAR or optimized standard care groups. EFICAR group received a 3 month progressive exercise programme supervised by primary care nurses with an aerobic (high-intensity intervals) and a strength component; the programme continued linked with community resources for 9 months.

The main outcome measure was the in health-related HRQoL measured by the Minnesota Living with Heart Failure Questionnaires (MLHFQ) and the SF-36, at baseline, 3, 6 and 12 months. Intermediate outcomes were changes in functional capacity measured by the 6-Minute Walking Test (6MWT), B-type natriuretic peptides, muscle strength, and body composition.

Results: After optimization of treatment, 150 patients were randomly assigned to EFICAR (75) or standard care (75) groups. The clinical evolution over 12 month follow-up was significantly better in the intervention group for functional capacity ($p < 0.024$) but not for HRQoL ($p = 0.814$). The greatest difference for functional capacity was found at three months (adjusted difference: 28 m, 95% confidence interval 9.4 to 46.9). The effect of intervention on HRQoL was positively modified when considering the actual exercise doses performed by patients ($p < 0.013$), EFICAR patients increased 0.45 HRQoL points by each 10 additional MET*hour/quarterly of exercise.

Conclusions: EFICAR programme, performed in the context of primary care services with the collaboration of primary care nurses and without high technological requirements, was safe and feasible. Our results showed that EFICAR programme improved functional capacity but it did not translate into HRQoL improvement. This could be due to the limited capacity of the programme to achieve the expected levels of exercise in all the patients, as we found that there was a dose-response association between exercise and HRQoL improvement. The short term results wears off at 12 months, reflecting the difficulties to link the programme with community resources after the supervised sessions.

Limitations: The ceiling effect related to the selection of HF patients with a high baseline HRQoL made improvement more difficult to be seen. Even so we found positive results. Additionally we will report the low compliance with the exercise protocol, which undermines the capacity of the programme to improve HRQoL.

Suggestions for future research: It is necessary to continue advancing in future research on the therapeutic effect of physical exercise in order to determine the optimal components of the exercise programs regarding strength and aerobic intensity that show the adequate dose-response relationship in patients with HF and the compliance

Keywords: exercise; chronic heart failure; quality of life; primary care; functional capacity.
