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## Impact of a home-based cardiac rehabilitation program in heart failure during the COVID-19 pandemic

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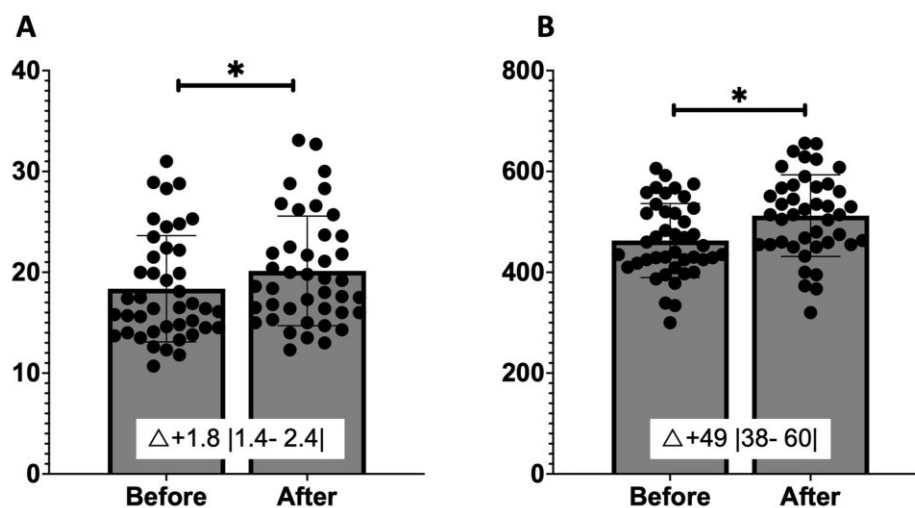
**Introduction:** Cardiac rehabilitation (CR) is an evidence-based recommended treatment of heart failure (HF) patients. During the COVID-19 pandemic, the shutdown of CR centers was necessary to limit the infection risk among high-risk patients. The integration of a home-based CR (HBCR) program in CR units can help to improve the delivery of care and improve cardiovascular outcomes of HF patients.

**Purpose:** To assess the effectiveness of an HBCR program in HF patients.

**Methods:** This is a substudy of the EXercise InTervention in Heart Failure trial (EXIT-HF), which include forty-nine HF patients (preserved and reduced ejection fraction). The HBCR program consisted in 12-week combined exercise program (60%-80% of peak oxygen consumption (VO<sub>2</sub> peak)), 2 training sessions per week, for a total of 24 sessions. Patients performed 4 supervised training sessions and the remaining sessions at home. All patients performed a cardiopulmonary exercise test (VO<sub>2</sub> peak), the 6-minute-walking test (6MWT), collected blood analysis (plasma NT-proBNP), and answered the Minnesota Living with Heart Failure Questionnaire.

**Results:** Forty-two patients (86%) complete at least 80% of prescribed training sessions (age: 61.1±12; FEVE: 37.1±10.8). The HBCR program improve VO<sub>2</sub> peak from 18.3 to 20.1ml/kg/min (+1.8 ml/kg/min; 95%IC:1.4 to 2.4; p<0.001) and the walked distance at the 6MWT from 462 to 512 meters (+49 meters; 95%IC: 38 to 60; p<0.001). In addition, overall quality of life was improved (-13 points; 95%IC:-7.8 to -18.5; p<0.001), as well physical (-6.3 points; 95%IC:-3.5 to -9; p<0.001) and emotional dimension of quality of life (-2.8points ; 95%IC: -0.9 to -4.7; p=0.06). No significant change was found in NT-proBNP levels (820±1220 vs 674±903; p=0.285).

**Conclusions:** Our results showed that HBCR is feasible and can improve functional capacity and quality of life in HF patients.



**Figure 1** - Peak oxygen consumption (A) and distance in the six-minute-walking test (B) before and after home-based cardiac rehabilitation program in heart failure patients.