

Hybrid cardiac telerehabilitation program as a potential strengthening factor in the quality of life in patients with coronary heart disease: a retrospective single-centre analysis

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Cardiac rehabilitation (CR) has well known beneficial effects on physical capacity, health-related quality of life, morbidity and mortality in patients with coronary artery disease (CAD). However, underuse of CR and not sustained improvements have been noted. It has been proposed that telemonitored exercise-based CR, by the use of mobile applications, can improve patient adherence to CR programs providing better outcomes.

The aim of this study was to investigate the effects of telemonitored cardiac rehabilitation on physical capacity, health-related quality of life and control of cardiovascular risk factors among patients with CAD on phase 2 of the Cardiac Rehabilitation Program (CRP).

A retrospective study was conducted and patients in CRP between 2017 and 2020 were included. Patient selection and information collection were obtained through medical records. Outcomes were Body Mass Index, Hospital Anxiety and Depression Scale (HADS), EuroQol-5D score (EQ-5D), International Physical Activity Questionnaire (IPAQ), estimated functional capacity in cardiac stress test, lipid panel and glycated hemoglobin. Patients were divided into two groups: group 1 followed the conventional strategy and group 2 followed a hybrid telemonitored CRP, with the use of

MOVIDA mobile application. Variables were analysed in the beginning (T0) and in the end (T1) of the phase 2, around 3 months after. Group comparisons tests and multivariate logistic regression were performed. A p-value less than 0.05 is statistically significant. Statistical analysis was performed using SPSS software v25.0.

We analysed 107 patients, which 93 of these were assiduous and 69 concluded the phase 2 of CRP: 44 patients in group 1 and 25 patients in group 2. Two groups have similar baseline characteristics, except for age ($p=0.02$). It appears that participation in the PRC led to an improvement in physical capacity, mental well-being, and in lipid panel, regardless of the strategy. The improvement in quality of life, quantified by EQ-5D, was significant only in group 2 ($p=0.03$). There is also no correlation between age and the differences recorded in EQ-5D ($p=0.86$).

We hypothesise that, when compared to conventional CRP, cardiac telemonitored exercise using modern communication methods and on-demand coaching will result in an improved behavioural change, which translates to higher quality of life. Further studies including more patients and the phase 3 of CRP are needed to confirm these results.