

Cardiovascular risk factor control: is it possible with a home-based cardiac rehabilitation program?

Cunha NPD¹; Aguiar-Ricardo I.¹; Rodrigues T.¹; Couto Pereira S.¹; Silverio Antonio P.¹; Valente Silva B.¹; Alves Da Silva P.¹; Brito J.¹; Pinto R.¹; Lemos Pires M.¹; Borges M.¹; Pires S.¹; Ramalhinho M.²; Pinto FJ.¹; Abreu A.¹

¹Santa Maria University Hospital/CHULN, CAML, CCUL, Lisbon School of Medicine, Universidade de Lisboa, Cardiology Department, Lisbon, Portugal

²Centro Hospitalar Universitário Lisboa Norte, Serviço de Medicina Física e Reabilitação, Lisbon, Portugal

Funding Acknowledgements: Type of funding sources: None.

Introduction: Cardiovascular risk factors (CVRF) control, needing different strategies, through patient education, lifestyle changes and therapeutic optimization is a central core of cardiac rehabilitation. However, further studies are needed to demonstrate effectiveness of home-based Cardiac Rehabilitation (CR-HB) programs in controlling CVRF.

Purpose: To evaluate the effectiveness of a CR-HB program in controlling cardiovascular risk factors.

Methods: Prospective cohort study including patients who were previously participating in a centre-based CR program and accepted to participate in a CR-HB program due to forced closure of the centre-based CR program for COVID-19 pandemic. The CR-HB consisted of a multidisciplinary digital CR program, including patient regular assessment, exercise, educational, and psychological and relaxation sessions. A structured online educational program for patients and family members/caregivers was provided including educational videos, and power-points and webinars. A real time Webinar regarding "nutritional myths and facts" was organized with the duration of 90 minutes as a substitution of the regular face-to-face regular workshop provided at our centre-based CR program. Also, self-control of blood pressure and heart rate and of glycemia in diabetics were promoted, as well as smoking cessation.

To assess the impact of the CR-HB on risk factors control, all the patients were submitted to a clinical and analytical evaluation before and after the end of this at distance program.

Results: 116 cardiovascular disease patients (62.6 ± 8.9 years, 95 males) who were attending a face-to-face CR program were included in a CR-HB program. Almost 90% (n = 103) of the participants had coronary artery disease. Regarding risk factors, obesity was the most prevalent risk factor (74.7 %) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%).

Regarding the blood pressure control, 80% of the patients stated that almost daily they measured blood pressure at home; baseline systolic pressure decreased from 117 ± 13 to 113 ± 12mmHg, p = 0.007, while there was no significant change in diastolic pressure.

The majority (76%) of diabetic patients said they controlled blood glucose; HbA1c decreased from 6.1 ± 1.1 to 5.9 ± 0.9mg/dL (p = 0.047).

Considering the lipid profile, LDL decreased (from 75 ± 30 to 65 ± 26mg/dL, p = 0.012). The Nt-proBNP also decreased (818 ± 1332 vs 414pg/ml ± 591, p = 0.042). There were no other statistically significant differences concerning risk factors modification.

Conclusions: Our study showed that a Home-based Cardiac Rehabilitation program can improve or maintain cardiovascular risk factors control, which has important prognostic implications and is frequently a difficult task to achieve.