

Home-based Cardiac Rehabilitation in Covid Era: Is it a safe option?

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Introduction: Home-based Cardiac Rehabilitation (CR-HB) models have been shown to be effective, however, there is a large variation of protocols and minimal evidence of effectiveness in higher risk populations, in which exercise at distance might be concerning. In addition, lack of reimbursement models has discouraged the widespread adoption of CR-HB. During the coronavirus 2019 (COVID-19) pandemic, an even greater gap in CR care has emerged due to the decreased availability of on-site services.

Purpose: Evaluation of the safety of a CR-HB program during COVID-19 pandemic.

Methods: Prospective cohort study which included patients (pts) who were participating in a centre-based CR program and accepted to participate in a CR-HB after the centre-based CR program closure due to COVID-19. The CR-HB consisted in a multidisciplinary digital CR program, including: 1. pts regular clinical and exercise risk assessment; 2. psychological tele-appointments and group sessions; 3. online exercise training sessions, which consisted of recorded videos and real time online exercise training sessions (each session recommended 3 times per week, during 60 minutes); 4. structured online educational program for pts and family members/caregivers, including educational videos and webinars; 5. follow-up fortnightly questionnaire to evaluate risk factors control and need for appointments or directing to hospital; 6. nutrition tele-appointments; 7. physician tele-appointments, scheduled according to follow-up questionnaire or at patients request (e-mail or telephone) to avoid unnecessary exposure and overload in the hospital. Minor and major adverse events such as hospitalizations due to cardiac event or other non CV reason, cardiac or noncardiac death, during or immediately after the exercise sessions, were collected.

Results: 116 cardiovascular disease (CVD) pts (62.6 ± 8.9 years, 95 males) who were attending a Centre-based CR program were included in a CR-HB program. Almost 90% ($n = 103$) of the participants had coronary artery disease; 13.8% pts had heart failure. The mean LVEF was $52 \pm 11\%$; 31.1% of the population had at least moderate risk. Regarding risk factors, obesity was the most common risk factor (74.7%) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%).

98 CVD pts (85.5%) successfully completed all the online assessments. Three male participants dropped out for hospitalization due to knee surgery, pacemaker implantation and in-stent restenosis without relation to exercise sessions. No major events were registered during the exercise training sessions and only one minor adverse event, sprained ankle, was reported during the training sessions.

Conclusions: This CR-HB program, originated by the need of social distancing during COVID-19 pandemic, revealed to be a valuable and safe strategy to reach at distance most patients previously in a Centre-based CR program.