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EDITORIAL NOTE

Cardiac rehabilitation programs for heart failure patients in the time of COVID-19

Programas de reabilitação cardíaca para doentes com insuficiência cardíaca durante o período do COVID-19

The current COVID-19 pandemic is challenging heart failure (HF) care in many ways. It is estimated that 380 000 people currently live with HF in Portugal and more than 35 000 HF hospitalizations take place in our healthcare system every year.[1] Stable HF patients on optimal drug therapy have an annual risk of being hospitalized of around 10-20%.[2] This risk can be reduced by 30% if patients follow a cardiac rehabilitation (CR) program,[3] as recommended by the European Society of Cardiology guidelines (class I recommendation, level of evidence A).[4] However, the participation of HF patients in CR programs was already disappointingly low,[5] and the delivery of this treatment will be further disrupted in the time of COVID-19.

CR is a multidisciplinary intervention that includes several core components, including patient assessment, management and control of cardiovascular risk factors, physical activity counseling and exercise training prescription, dietary advice, psychosocial management and vocational support. Traditional center-based CR programs require the patient to travel to hospital facilities multiple times a week for several months to participate in group sessions, which increases social contact and consequently the risk of SARS-CoV-2 infection. In addition, patients with cardiovascular disease are known to be at greater risk of contracting a severe form of COVID-19. These new circumstances require the redesign of the CR delivery model, and home-based CR programs could be a way to proceed.

Home-based CR programs consist of the same core components as center-based programs but delivered in a non-clinical setting, such as the patient's home. In fact, most can be called hybrid programs, because they include a number of sessions during the first weeks in which patients are assessed and monitored during exercise, aiming to teach them how to self-monitor exercise intensity and recognize safety alert signals.[6] Home-based programs are as effective as center-based programs regarding improvements in quality of life, functional capacity and HF hospitalizations.[7] Recognition of home-based CR as a cost-effective intervention has led to its incorporation into the healthcare systems of several countries, including Australia, Canada, and the UK. Interestingly, the National Audit of Cardiac Rehabilitation Quality and Outcomes Report for 2019 by the British Heart Foundation reported that 10% of patients who attend CR participate in a home-based CR program. In countries like Portugal, with low CR attendance, home-based programs have the potential to expand the capacity of and access to the system, increasing CR program delivery.

Safety is always a major concern in patients with cardiovascular disease undergoing CR programs. A recent meta-analysis that included 31 randomized controlled trials with a total of 1791 HF participants reported that both home-based alone and hybrid CR were as safe as clinical-based CR,[8] including for patients with cardiac implantable electronic devices.[9] Telemonitoring during training sessions can include varying degrees of technology-assisted assessment ranging from a simple format using only a logbook and structured telephone calls to the use of wearable sensors, such as heart rate monitors, accelerometers or pedometers, or a high-tech approach such as remote ECG telemetry monitoring or synchronous videoconferencing. Decisions on what approach to use and the degree of technological sophistication required depend on patient-related factors, including cardiovascular risk, digital skills and personal preferences, and provider-related factors such as logistical conditions that include staff training and availability of technological equipment. The use of videoconferencing technologies, which enable patients to interact with the CR healthcare team (and potentially with other patients), currently appears to be a useful way to lessen the mental and physical consequences of social isolation imposed by the COVID-19 pandemic.[10]

Regardless of the telemonitoring methods adopted, there are several practical challenges posed by these remote CR programs. Extrapolation of the existing evidence is not

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straightforward for Portuguese HF patients, who may differ regarding health literacy, access to digital technology, personal preferences and attitudes regarding exercise. In this regard, we hope to be able to add new data from an ongoing pragmatic randomized trial, EXercise InTervention in Heart Failure (EXIT-HF) (Clinicaltrials.gov NCT04334603). In our experience, the most common barriers are the lack of infrastructure to perform exercise at home, low motivation to exercise, and some safety concerns. We aim to adjust the exercise training plan to patients' home physical conditions and help them to identify alternative spaces for aerobic training (e.g. shopping malls or parks near their home); we also encourage them to include physical activity in their daily routine. To increase patients' motivation, we make weekly telephone calls to review their training activities and give positive feedback, always trying to engage patients' families. Regarding safety concerns expressed by patients and families, we use a hybrid approach, with supervised sessions in our cardiac rehabilitation unit; we start with a low-intensity exercise prescription in order to promote patients' confidence and adherence, and then make weekly telephone calls and actively discuss exercise progression and any potential concerns.

The COVID-19 pandemic is challenging the delivery of CR programs to HF patients because we now have to consider the risk of SARS-CoV-2 infection. In addition, the pandemic is also testing the resilience of our healthcare system, which will need to continue to respond to the high healthcare utilization burden of HF patients. Implementing and scaling up home-based CR programs will improve patients' quality of life and reduce the number of HF hospitalizations. In addition, it will minimize the negative impact of social isolation and low exercise levels, and function as an important communication framework between this high-risk group of patients and the healthcare system.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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Cristine Schmidt[a,b], Sandra Magalhães[c], Ana Barreira[d], Fernando Ribeiro[e], Preza Fernandes[d], Mário Santos[d,f,*]

[a] *Unidade de Investigação Cardiovascular, Departamento de Cirurgia e Fisiologia, Faculdade de Medicina, Universidade do Porto, Porto, Portugal*

[b] *Centro de Investigação em Atividade Física Saúde e Lazer, Faculdade de Desporto da Universidade do Porto, Porto, Portugal*

[c] *Serviço de Fisiatria, Hospital Santo António, Centro Hospitalar Universitário do Porto, Porto, Portugal*

[d] *Serviço de Cardiologia, Hospital Santo António, Centro Hospitalar Universitário do Porto, Porto, Portugal*

[e] *Instituto de Biomedicina, Escola Superior de Saúde, Universidade de Aveiro, Aveiro, Portugal*

[f] *Unidade Multidisciplinar de Investigação Biomédica, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal*

[*] Corresponding author.
E-mail address: mariossantos001@gmail.com (M. Santos).