



## EDITORIAL COMMENT

# Cardiac rehabilitation after myocardial infarction: An invaluable intervention that is little used in Portugal<sup>☆</sup>

## Reabilitação cardíaca após enfarte do miocárdio: uma intervenção fundamental, pouco praticada em Portugal

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The article by Magalhães et al. published in this issue of the *Journal* assesses the benefits of a cardiac rehabilitation program (CRP) lasting an average of eight weeks on control of cardiovascular risk factors in patients with coronary artery disease, 65% of whom had suffered an acute coronary syndrome (ACS).

The current European Society of Cardiology guidelines for the management of ACS<sup>1,2</sup> give cardiac rehabilitation a class I recommendation (level of evidence B) and consider it a mandatory performance measure; they also recommend the adoption of a healthy lifestyle and a specific pharmacological regimen based on dual antiplatelet therapy, beta-blockers, angiotensin-converting enzyme inhibitors (or angiotensin II receptor antagonists) and statins.

Changing behaviors, especially in the long term, is not easy to achieve in the context of usual patient care, which is characterized by brief consultations, with no support from audiovisual material or other professionals such as psychologists, nutritionists and exercise physiologists, or advice on smoking cessation. The traditional approach does not allow for patient education or clarification of any questions the patients or their relatives may have, nor does it provide the

necessary support for behavior modification, which includes compliance with a permanent therapeutic regimen, smoking cessation if applicable, diet modification, regular exercise and adoption of a less stressful lifestyle.

It is essential to provide information on the measures to be taken, discuss foreseeable problems and establish support mechanisms if patients and their relatives are to comply with these recommendations in the long term.

Such changes are difficult to achieve because they entail abandoning habits that have been entrenched for decades, often in families of low socioeconomic status and often in asymptomatic patients who do not feel or understand the need to change.

Studies by Iestra et al.<sup>3</sup> and Chow et al.<sup>4</sup> in *Circulation* demonstrated significant reductions in mortality as a result of controlling traditional cardiovascular risk factors, which the INTERHEART study<sup>5</sup> had previously shown to be responsible for 90% of cases of ACS and which are implicated in subsequent coronary events.

Various studies and meta-analyses<sup>6,7</sup> have shown that CRPs reduce overall and cardiovascular mortality by 25–30%, particularly programs with a strong exercise component. Such programs, which for many are merely exercise programs adapted to cardiac patients, are in fact much more; they are holistic secondary prevention programs that include exercise, education of patients and their relatives, promotion of behavioral changes, adoption of a healthy lifestyle, early return to everyday activities and compliance with

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the pharmacological therapy recommended in international guidelines.<sup>8</sup>

A study by Darwood et al.<sup>9</sup> revealed that simply advising patients to stop smoking is not sufficient and that only institutional smoking cessation programs or a CRP will achieve this. Lavie and Milani<sup>10</sup> demonstrated that CRPs also alleviate the psychological effects of ACS (hostility, anxiety or depression) in patients of all age groups, although the benefits are greater in younger patients, in whom such effects are more significant.

The article by Magalhães et al. is based on the results of close cooperation between physiatrists and cardiologists at Hospital de Santo António, Porto, who set up a CRP several years ago that is known for its quality and the number of patients treated. It shows that participation in the program produces a significant reduction in risk factor profiles at all assessments during follow-up (three, six and 12 months after enrollment on the program), with excellent results in BP lowering, smoking cessation, diabetes control and levels of physical activity. The results were less favorable in terms of obesity, which is in agreement with the literature,<sup>11</sup> and lipid profile, for which the currently available therapeutic arsenal, allied to a degree of diet modification, could produce better results.

In the GOSPEL study,<sup>12</sup> published by Giannuzzi et al. in 2008, 3241 patients were randomized to one of two groups: 1620 participated in a month-long residential CRP and 1621 received usual care; the groups were compared in terms of control of traditional risk factors, adoption of a healthy lifestyle, cardiovascular events and overall and cardiovascular mortality. As in the study by Magalhães et al., the patients in the CRP group presented a healthier lifestyle over a three-year follow-up, as shown by higher levels of physical activity, lower levels of psychological stress and healthier diet. With regard to risk factors, the CRP group showed better lipid profile and blood pressure levels and a higher rate of smoking cessation. In contrast to Magalhães et al., the GOSPEL study reported a sustained reduction in body mass index but found no statistically significant difference between the two groups in serum levels of HbA1c, whereas the Portuguese study obtained positive results for this parameter.

The GOSPEL investigators, with a larger population and longer follow-up, obtained positive outcomes for the study's two composite endpoints: cardiovascular mortality, nonfatal infarction and nonfatal stroke; and cardiac death and nonfatal infarction.

It would be useful if CRP centers in Portugal, under the auspices of the Portuguese Society of Cardiology's Study Group on Exercise Physiology and Cardiac Rehabilitation, were to perform a national multicenter survey in order to determine whether cardiac rehabilitation as secondary prevention after ACS gives better results in terms of mortality, quality of life and cost-effectiveness compared to the usual care provided in public hospitals.

In Portugal, the rate of enrollment of eligible candidates in CRPs is less than 4%,<sup>13</sup> compared to over 30% in most European countries.<sup>14</sup> The situation in Portugal falls short of the ideal due to regional differences in the availability of CRP centers, with a significant deficit in inland areas compared to the littoral and in the south compared to the north; furthermore, patients have limited access due to the cost of

programs in private non-hospital centers and the lack of funding agreements with the national health service, which is responsible for the health care of around 80% of the population.

At a time when the national health service is assessing the types of care it should provide to the population, and in the light of the evidence and the European Society of Cardiology's guidelines, it is clearly justified and appropriate to strengthen the areas of prevention and rehabilitation which have been shown to be effective in reducing mortality and health costs in developed countries.

## Conflicts of interest

The authors have no conflicts of interest to declare.

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