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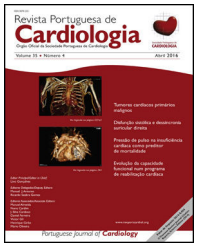

EDITORIAL COMMENT

Cardiac rehabilitation and risk factor control: Always guaranteed results?

Reabilitação cardíaca e controlo dos fatores de risco: resultados sempre garantidos?

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According to the most recently updated European guidelines, cardiovascular (CV) rehabilitation is strongly recommended after acute coronary syndromes (ACS), with a class I classification for both ST-elevation myocardial infarction[1] and non-ST-elevation myocardial infarction.[2] This recommendation is precisely aimed at ''achieving a healthy lifestyle and managing risk factors in order to reduce all-cause and CV mortality and morbidity, and improve health related quality of life''.

Undoubtedly, the favorable effect of cardiac rehabilitation on prognosis is well-known and widely confirmed, even in the modern era of advanced therapies and revascularization strategies. In the recent CROS-II meta-analysis,[3] participation in cardiac rehabilitation was associated with reduced total mortality in patients after ACS, with a hazard ratio of 0.37 for a prospective controlled cohort studies enrolling patients by 1995 or later. Generic and disease-specific health-related quality of life also improves after cardiac rehabilitation, at least in the short term for contemporary exercise-base programs.[4] These two (i.e., mortality and quality of life) are major outcome measures for cardiac rehabilitation programs and are generally assessed in the medium or long term, but what about the ''immediate effect size'' of cardiac rehabilitation on CV risk factor control? This is especially important in the ''vulnerable period'' after ACS, since up to one fifth of patients may experience recurrent atherosclerotic complications in the first year after the index event.

In this issue of the Journal, Silva[5] presented data from an observational monocentric study assessing CV risk factors among patients who completed an exercise-based CR program after myocardial infarction. Considering the ESC guidelines on dyslipidemia, hypertension and diabetes contemporary to the data collection, authors found that 61%, 87% and 71% of patients achieved the recommended targets, respectively. Regarding dyslipidemia, hypertension and diabetes combined, less than half of individuals (42%) achieved control. These findings, especially combined data, were considered quite unsatisfactory and – according to authors – are unmet needs for CV prevention activities.

At a first glance, the reported rates of risk factor control are far from negligible when compared to usual care with limited utilization of cardiac rehabilitation. In the EUROASPIRE V survey,[6] the majority of patients did not achieve their blood pressure, low-density lipoprotein cholesterol and glucose targets after ACS, despite a wider use of cardioprotective medications, and consequently one could speculate that – although it is not a panacea – cardiac rehabilitation provides added value to CV prevention activities.

Interestingly, these observations were obtained from an 8-week out-patient program, with utilization of high-

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intensity statin therapy in nine out of ten patients, great attention to physical training (as evidenced by the utilization of cardiopulmonary exercise testing), and with significant time variation in LDL-cholesterol, blood pressure, and glycated hemoglobin values.

So – while having enough time, expertise, and multidisciplinarity – why are secondary prevention treatment targets not systematically being achieved after ACS in the favorable context of CR activities?

Time deserves better appraisal. In many cases, to reach metabolic targets, such as glycemic control, or lipid control, especially where there is intolerance of first line regimens – an extended time window may be needed, and active surveillance may have to be maintained. ''Shoot and forget'' is clearly not part of the ''cardiac rehabilitation fabric'' but, equally undeniable, long programs also including a structured phase III may have higher probability of succeeding than rehabilitation programs limited to the usual post-acute phase II. This is even more reasonable for other lifestyle targets, such as weight control or the promotion of continuing physical activity.

Then, expertise could be read in a lot of ways, both at a center and an individual level. In the recent position statement of the Secondary Prevention and Rehabilitation Section of the European Association of Preventive Cardiology (EAPC) on quality improvement,[7] defining the minimum and optimal cardiac rehabilitation standards, significant emphasis was placed on structure-based and process-based metrics useful to risk assessment and risk factors management. This document also defined several key performance indicators to be used in a national or international accreditation program, suitable for an internal (within the CR center) or external assessment on a cyclic, repetitive and periodical basis. In the field of blood pressure, lipids, and glycemic interventions, adequate control of these risk factors should be reached in more than 50% of patients, and this cut-off could be utilized for benchmark activities. Moreover, the EAPC Core Curriculum for Preventive Cardiology[8] recently helped to standardize training in preventive cardiology across Europe and formed the basis for subspecialty certification for cardiologists. Dealing with the CanMEDS roles (i.e., the abilities physicians require to effectively meet the healthcare needs of the people they serve) of those managing secondary prevention and rehabilitation programs, this document gave particular importance to the role of the communicator, collaborator, and health advocate, in addition to medical expert. Taken together, these two source documents tell us that – in CV prevention – simply being up to date with numerical targets provided by major guidelines may not be sufficient.

Finally, the topic of multidisciplinarity is strictly linked to the possibility to deliver all core components of CR activities,[9] namely patient evaluation, physical activity counseling, exercise training, pharmacologic intervention, psychosocial counseling, and weight management. All these may contribute synergically to achieving secondary prevention targets and allied professionals play an important role. As documented in the literature, the qualitative and quantitative weakening of cardiac rehabilitation programs – in terms of fewer components delivered or fewer health figures involved – may lead to unsatisfactory outcomes[10] and consequently, in the modern era, the evaluation of the global performance of a structured prevention and rehabilitation program is becoming even more significant.

In conclusion, the work by Silva provides two important messages to general cardiologist and the whole cardiac rehabilitation community. The first (''more referral to cardiac rehabilitation'') is very simple and based on a greater chance of reducing global CV risk. The latter is an invitation to recognize that ''the beneficial effect of cardiac rehabilitation depends strongly on treatment components, intensity, and volume'' (i.e., a structured and multimodal intervention, to be delivered according to adequate process metrics, and with appropriate time duration), and that the effect on CV risk factors does not escape this.

Conflicts of interest

The author has no conflicts of interest to declare.

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