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Editorial

Nationalization of post-MI managed care: a worthy cause but not without its challenges

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Long-term mortality rate after an index acute myocardial infarction (AMI) continues to be high in many countries [1]. The absolute mortality rate is higher in the first year after AMI but still relevant even after >10 years showing an excess risk of mortality in this population due to lack of continuum of care [2]. This can be partially explained by large number of trials demonstrating poor adherence to lifestyle interventions, for instance, the results of EUROASPIRE V revealed that among patients with CHD many have unhealthy lifestyles in terms of persistent smoking and weight related dietary factors, including sedentary behavior [3].

In this issue of International Journal of Cardiology, Wita et al. [4] reported a Poland single-center observational study of four-phase managed care program after acute myocardial infarction (MC-AMI), 719 patients participating in the program were compared to 1130 subjects in the control group. After propensity score matching (PSM), two groups of 529 subjects each were followed-up to 12-month. Cox-Regression analysis was used to compare quality-of-care measures including complete revascularization and ICD implantation as well as MACCE. MC-AMI was related with MACCE reduction by 40% in a 12-month observation period. Participants of MC-AMI had a higher adherence to cardiac rehabilitation (98 vs. 14%), higher rate of scheduled revascularization, elective percutaneous coronary intervention and ICD implantation compared to control. Multivariable Cox regression analysis revealed MC-AMI participants to be inversely associated with the occurrence of MACCE (HR = 0.500, 95%CI 0.349–0.718, $p < 0.001$) showing the benefit of this cardiac rehabilitation (CR) care program.

The findings by Gudbjörnsdottir et al. [5], that the number of cardiovascular risk factors present is a major determinant of outcomes during long-term follow-up emphasizes the importance of including CR and other secondary prevention therapies aiming to control risk factors after an AMI episode. Improvements in acute care as reperfusion therapy besides medication adherence, reduction in depression rates and support return to work in association with evaluation of quality of care metrics and outcomes analysis are key performance actions used for good long term-outcomes. For this reason, an attempt to organize a national network of CR after AMI is of major relevance. However, it is worthy to mention that clinical practices that can reduce a short to mid-term mortality-rate after AMI are far better defined nowadays turning into considerable reduction in world-wild mortality in last few years. These interventions have received a large amount of investments, however, structured CR services exist in fewer than 40% of countries throughout the world and majority of them are in high-income countries [6].

One reason for these disparities in health care is the lack of integration of transition and continuum of health care services. This integration can be achieved by improvements in medical organization development such as: common medical records, shared administrative leadership and a reduction in variations of healthcare practice. Of particular concern are findings of lower rates of guideline-based therapeutics utilization among certain high-risk groups, such as minorities (e.g. elderly and unstable patients) but portion of this excess mortality may be only due to poor quality of coordination of care. In fact, in patients with pre-existing cardiovascular disease, in diabetics and in those with a high burden of cardiovascular risk factors, we should invest more energy in the implementation of optimal medical treatment and secondary prevention measures.

Moreover, Benson et al. [7] reported disparities among CR programs by different cardiology societies mentioning the problems in the program standardization. Those should be mention by authors in details and the differences in outcomes analyzed by phase and

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intervention aiming to increase the literature available data with accurate metrics about how CR can improve quality of life and the outcome of these patients. Recommendations for aerobic endurance training are universally incorporated into guidelines for CR, however, the intensity at which these exercises should be performed varies among nations, coordination of all 3 or 4 phases and how long each phase should takes is also not well defined. Another important discordance among CR programs is related to functional assessment exams (e.g. echocardiography and treadmill) during CR program follow-up. For instance, ESC guidelines recommend post-AMI ejection fraction at 6–12 weeks after discharge [8], however, further analysis maybe important in sub-group patients and in other time points. Furthermore, the value of performing a functional assessment exam pre-CR program or a residual ischemic evaluation post-AMI patients if they are needed or if they should be repeat after drug escalation or heart functional recovery, all are remaining unclear points in the literature.

Finally, I would like to congratulate the authors on their work by demonstrating how nationalization of post-MI CR can increase patient's care, benefit health care system and reduce MACCE events. In the last few years digital innovation has enhancing the efficiency of care delivery and improves patient's experience. Future directions to population health management might involve cost-effect interventions and mobile health represents a means by which to continue care beyond site-based CR and increase the likelihood of maintaining positive long-term outcomes. Double-blinded well-designed studies of remotely monitoring patient's risk factors and CR-program adherence might be interesting data coming from Poland CR program to provide evidence of how telehealth-based approach can avoid patient site consultation and reduce health costs.

Declaration of Competing interest

The authors report no relationships that could be construed as a conflict of interest.

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