A novel approach to post-acute myocardial infarction care

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Despite the development and implementation of novel pharmacological and technological treatments, combined with policy initiatives to deliver reductions in cardiovascular mortality, cardiovascular disease (CVD), and specifically ischemic heart disease (IHD), remains the leading cause of death worldwide. Among all CVD manifestations, acute myocardial infarction (AMI) is considered the most lethal one [1]. Short-term AMI prognosis is determined by clinical presentation, comorbidities, timing of invasive strategy, vascular access, left ventricular ejection fraction, length of hospital stay, and in-hospital complications. After discharge, cardiac rehabilitation (CR), utilization of implantable cardioverter defibrillators (ICDs) or cardiac resynchronization therapy (CRT) in eligible post-MI patients, coupled with adequate lifestyle interventions and optimal guidelines-directed medical therapy (GDMT) have all been shown to improve prognosis [2–6]. Nevertheless, despite clear recommendations by worldwide practice guidelines, large variations in their implementation among patients with AMI can still be observed [7, 8]. Limited access to cardiac outpatient care, with an emphasis on CR [9, 10], is considered a major barrier to long-term prognosis improvement [11, 12]. Thus, adherence to optimal post-AMI care is of utmost importance.

Managed Care in Acute Myocardial Infarction (MC-AMI) is a program introduced in Poland to improve the long-term prognosis of AMI patients through comprehensive, scheduled, and supervised care. The program has four core modules: I — hospitalization and acute intervention according to the European Society of Cardiology (ESC) guidelines, II — cardiac rehabilitation, III — complete revascularization when indicated, coupled with implantation of an ICD or cardiac resynchronization therapy-defibrillator (CRT-D) in eligible patients, and IV — 12 months of scheduled outpatient cardiology care. Wita et al. [13] have previously demonstrated the importance of MC-AMI in a 12-month follow-up. Notably, differences were seen as soon as 3 months following intervention. In this current publication, Kułach et al. [14] compared the 24-month mortality rates and incidence of major adverse cardiovascular events (MACE: a composite of death, recurrent MI, and hospitalization for heart failure) in a cohort of AMI patients treated in the MC-AMI era (intention-to-treat analysis) vs. similar population treated before the MC-AMI era. The investigators analyzed 2323 consecutive patients with AMI: 1261 patients enrolled in the MC-AMI era (study group) and 1062 patients treated 12 months before the MC-AMI era (control). In the study group, 57% of patients participated in MC-AMI, while 43% remained under standard care. The treatment of MI in the MC-AMI era was associated with a 30% reduction in all-cause mortality, and a 14% reduction in MACE, although it was not related to the reduction of hospitalization for heart failure or MI in 24-month follow-up. The number needed to treat to avoid one MACE was 11 patients, and the number needed to treat to avoid one death was 19. The highest 24-month survival rate was observed in the MC-AMI enrolled patients while the patients treated in the MC-AMI era, but not enrolled, had a similar prognosis to those treated before MC-AMI was available. Multivariable Cox regression analysis within the entire cohort

showed the MC-AMI era to be inversely associated with mortality in 24-month follow-up (hazard ratio [HR], 0.5; 95% confidence interval [CI], 0.38–0.66; *P* <0.001).

In the current study, as opposed to an earlier publication [13], intention-to-treat analysis was used, confirming an unbiased effect of the MC-AMI program. It is well known that patients who adhere to an assigned treatment do much better than those who do not adhere [15], which explains the worse outcomes in patients who did not consent or were not eligible for the program in the MC-AMI era. The present results confirm the importance of post-AMI optimal care (as implemented by the MC-AMI program) and its impact on long-term prognosis. Importantly, there were fewer women with AMI enrolled in the MC-AMI program according to the intention-to-treat analysis. Given that CR is underused in women worldwide, it is crucial to remove all barriers to post-AMI optimal care for women.

The investigators hypothesize that reduced mortality and MACE in the study group are related to components of the MC-AMI program: cardiac rehabilitation, complete revascularization, and scheduled outpatient care. Despite this being a reasonable assumption, the data to support it are lacking and deserve further evaluation. Furthermore, it is unclear whether reduced all-cause mortality is in part due to lower rates of cardiovascular mortality. Finally, the use of contemporary medications (sodium-glucose contransporter-2 inhibitors, angiotensin receptor-neprilysin inhibitors, etc.) and different treatment goals in the MC-AMI era, in particular, that of low-density lipoprotein cholesterol, might have affected the outcomes.

It is also worth mentioning that in this study [14] AMI was not diagnosed using the latest universal definition of MI. In addition, the dataset is missing some variables, including socioeconomic and behavioral risk factors, which could potentially affect both enrollment and compliance. Last, the study was performed in a single center.

This novel study and current analysis highlight the importance of post-AMI care in the current era of evidence-based medicine, including complete revascularization, implantation of an ICD or CRT-D in eligible patients, and optimal GDMT. In conclusion, the MC-AMI program improves short and 2-year outcomes of post-AMI patients and thus can be recommended as a post-AMI program.

Article information

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