Secondary cardiovascular prevention in clinical practice: what do we need today?

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Abstract

In the last decades, the post-hospital mortality from coronary artery disease (CAD) has significantly increased. This new trend in the epidemiology of CAD has been largely attributed to the improvement of survival from acute coronary syndromes that generated increasing incidence of population at high risk of recurrences and rehospitalization for major adverse cardiovascular events (MACE) and heart failure (HF). Thus, much longer after the acute event than we had thought, we have now been facing with higher complexity of “chronic” CAD phenotypes which deserve high clinical attention and more and more intricate pharmacological management. Although the guidelines recommend implementing secondary prevention programs through cardiac rehabilitation (CR) facilities in order to achieve a better outcome, i.e. decreased morbidity, re-hospitalization and increased adherence to evidence-based interventions, the referral rate to CR is paradoxically scarce. The Italian Association of Clinical Preventive Cardiology and Rehabilitation (AICPR) has been launching a survey involving the Network of Italian CR centers, which will make possible to observe trends, implement guidelines recommendations and then verify the effectiveness of the interventions and outcomes in post-acute and chronic CAD.

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In last ten years significant changes in the clinical epidemiology of acute coronary syndromes (ACS) have taken place. Despite the progressive reduction of in-hospital mortality, paradoxically, the post-hospital mortality has significantly increased [1-4]. This new trend in the epidemiology of coronary artery disease (CAD) has been largely attributed to the implementation of treatments of the acute phase of myocardial infarction (MI). As a consequence, the rising number of survivors has progressively increased the population at high risk of recurrences (major adverse cardiovascular events, MACE). This new scenario we are facing with, that was once called “stable” ischemic heart disease, is no longer to be considered as such. Both heart failure (HF) and the residual high atherothrombotic risk (HTR) [1,5] have been identified as the major independent predictors of recurrent MACEs. HTR can be detected both by clinical factors, such as diabetes mellitus, renal failure, peripheral artery disease, a history of angina or previous acute myocardial infarction (AMI), and by anatomical/surgical factors as the presence of multivessel disease, especially if treated with incomplete revascularization, or no revascularization at all. Both observation from registries [4,6] and epidemiological studies [1] show that patients with HTR may present with MACEs even far from the index event. In an Italian National retrospective cohort study from the administrative database of the National Health Institute that recruited 186.646 patients admitted for a MI from 2009 to 2010 in all the Italian hospitals, the risk of MACE remained high over 5 years after a first MI in patients with HTR. High residual risk had been defined, as commonly in most current studies, by at least one of the following: previous MI, vascular disease, type 2 diabetes mellitus or renal failure (GFR< 60 ml/min/1.73 m²) [7]. Intervention studies as the PEGASUS-TIMI 54 (Prevention of Cardiovascular Events in Patients with Prior Heart Attack Using Ticagrelor Compared to Placebo on a Background of Aspirin-Thrombolysis in Myocardial Infarction) [8,9] and the Dual Antiplatelet Therapy Study [10] have confirmed observational and epidemiological data. Prolonged dual antiplatelet therapy (DAPT) for up to three years yielded a prognostic benefit in selected patients at very high risk of ischemic recurrences. The IMPROVE-IT (Improved Reduction of Outcomes: Vytorin Efficacy International Trial) and nowadays the FOURIER [11] and ODYSSEY outcomes [12] have reinforced the notion that lowering the LDL-cholesterol level leads to a reduction in CV events continuous, linear without any apparent threshold, emphasizing the need for long-term intensive secondary prevention in subgroups of patients with high residual atherothrombotic risk. Finally, in the recent COMPASS trial (Cardiovascular Outcomes for People Using Anticoagulation Strategies) [13], combination of aspirin and rivaroxaban at “vascular” doses has shown to be effective in improving survival even after 7–10 years after a first cardiovascular (CV) event in patients with coronary or
Peripheral vascular disease, indicating a further long-term potential therapeutic strategy and, in fact, offering a second chance even when the CV prevention facilities are scarce and continuity of care has been lacking [14]. Despite this large body of evidence, however, the adherence to pharmacological therapies after an acute event is far from being maintained over time. The main European survey (EUROASPIRE) on the effectiveness of a secondary prevention intervention [15] demonstrated that risk factors (RFs) control is far from being optimal. A central point in the success of secondary prevention programs is the referral to cardiac rehabilitation (CR) programs [16].

Meta-analysis of randomized trials and Cochrane showed decreases recurrent MI and morbidity rates either inpatients presenting with coronary heart disease [17] or HF [18]. CR participation is associated with a 20% to 30% reduction in hospital readmission during the year after a cardiac event [19-21]. Much of this effect is due to the increase in adherence to evidence-based therapy [22].

In the paper by Faggiano et al. recently published in the Monaldi Archives for Chest Disease [23], the authors aimed at evaluating the achievement of risk factors’ control and appropriate drug prescription/adherence in patients attending secondary prevention/CR ambulatory visit after index CV event in a time period ranging 1 to 5 year. Eight hundred patients at a high risk, aged 69±10.9 years were recruited. All patients were highly treated with evidence-based drugs. Patients that have participated to CR after a cardiovascular event showed best achievement in blood pressure and LDL-cholesterol targets. The goal of LDL-c<70mg/dl was achieved in about 70% of patients. Thus, implementing secondary prevention guidelines into the ‘real world’ clinical practice in “late” interval from 1 to 5 years after a cardiovascular event is feasible. Hence, what should we have to do? Addressing appropriate care in the according to the individual patient’s level of risk is the answer. The scientific community will have to verify not only the appropriateness of care and the adherence to the guidelines in secondary prevention centers, but also to monitor the referral rate to CR facilities form acute care centers. Participation in CR programs for patients hospitalized with CAD of HF in recommended by European guidelines in class I, level of evidence A [24]. The Survey On risk FactOrs and Cardiovascular secondary preVention and drug strategy in Italy (SOFOCLES)”, is the answer by which the AICPR (Italian Association of Clinical Preventive Cardiology and Rehabilitation) intend to address these new needs in CV prevention. The survey will highlight the state of the art of diagnostic-therapeutic pathways of post-acute and chronic ischemic heart disease in Italy; will investigate the correct selection of high-risk patients and the appropriateness of pharmacological prescriptions in these subgroups. Furthermore it will investigate on the causes of non-optimal adherence to drug therapy in order to identify corrective measures in the management of care in CAD.

In conclusion, much more longer after the acute event than we had thought, we have to face with higher complexity of “chronic” CAD phenotypes (for the rising incidence of elderly population presenting with multiple comorbidities and multiple vessels disease), that deserve high clinical attention and more complex pharmacological management (prolonged DAPT; association between antiplatelet agents and anticoagulants at full or “vascular” doses; multiple association of iopipidemic drugs); this can make difficult to evaluate the risk / benefit ratio and cost-effectiveness of care. A network of cardiovascular secondary prevention / cardiac rehabilitation centers will make possible to observe trends, implement the recommendations of the guidelines and then verify the effectiveness of the interventions. This is the only way to check the appropriateness of our work and at the same time a great challenge of the future of preventive cardiology that we do not want to lose.

References


