Timely reperfusion with thrombus aspiration and coronary stenting accompanied by potent adjunctive antiplatelet and antithrombotic therapy has dramatically changed the clinical outcome of ST elevation myocardial infarction (STEMI). Since the concept of limiting myocardial infarct size by prompt myocardial reperfusion was described in the early seventies\(^1\) in-hospital mortality of STEMI has been reduced from 30% to single-digit levels in the latest clinical reperfusion trials.\(^2\)

Although the mortality of cardiovascular diseases has been halved in the last 50 years\(^3\) it still remains the leading cause of death in developed countries.\(^4,5\) Moreover, during the next decades health authorities will face a tremendous challenge as the prevalence and costs of cardiovascular disease will show a progressive and substantial increase related to the aging of the population.\(^6\)

Using a hospital discharge administrative database, Andrés et al. in the article published in Revista Española de Cardiología analyzed the long-term outcome of patients with acute myocardial infarction in Aragon between 2000 and 2007.\(^7\) Their analysis shows that readmission for recurrent acute myocardial infarction is very common: readmission due to a new acute myocardial infarction was recorded in 44.2% of patients aged 45 to 65 years during the first year and in 73.9% at 3 years after hospital discharge. This high recurrence rate is in keeping with the observations in other registries.\(^8-10\)

Modern management of acute coronary syndromes has resulted in a markedly improved in-hospital outcome but morbidity and mortality burden during early- and long-term follow-up is almost three to four times higher than during the initial hospitalization. Moreover, the risk for recurrent cardiovascular events and mortality during long-term follow-up is higher among patients with non-ST elevation acute coronary syndromes than in patients with a STEMI, which until recently was not recognized. Therefore, if we want to improve further quality of care of acute coronary syndromes, we should concentrate more on the prevention of recurrent cardiovascular events and mortality during early- and long-term follow-up.

How can we do this? First of all by performing a more complete coronary revascularization in STEMI patients with multivessel coronary artery disease. Compared to culprit-vessel-only angioplasty, multivessel revascularization in STEMI patients was associated with a marked reduction of major cardiac adverse events during long-term follow-up.\(^11\) Nonculprit lesions, if proven significant by fractional flow reserve measurement, should probably best be treated by percutaneous coronary intervention or coronary artery bypass grafting as a staged procedure during or shortly after the initial hospitalization rather than by acute multivessel percutaneous coronary intervention on admission.\(^12-15\)

Furthermore, in patients with preexisting cardiovascular disease, in diabetics and in those with a high number of cardiovascular risk factors, we should invest more energy in the implementation of optimal medical treatment and secondary prevention measures. The finding by Andrés et al.\(^7\) that the number of cardiovascular risk factors present is a major determinant of readmission and mortality during long-term follow-up emphasizes again the importance of including cardiac rehabilitation and other secondary prevention measures, besides reperfusion procedures, in composite performance actions used for evaluating quality of STEMI care.\(^16\)

The important role of cardiovascular risk factors as major determinants of recurrent cardiac events after myocardial infarction is also in line with the observation that more than half of the reduction of cardiovascular mortality observed in developed countries during the last 50 years was related to improved cardiovascular prevention and better implementation of efficacious medical therapies, rather than to new technological therapeutic interventions.\(^17\) The aging of the population will in the near future lead to a major surge in the need for hospitalizations of patients with acute cardiovascular syndromes. Any reduction in the need for rehospitalization after a first acute myocardial infarction by a more effective secondary prevention of coronary artery disease will therefore be more than welcome.

Finally, the observation that a great number of rehospitalizations occur well beyond the typical 12-month duration of a randomized clinical trial emphasizes again the important complementary role of observational studies and long-term registries in

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the assessment of the efficacy of new treatment modalities or drugs for secondary prevention after an acute coronary syndrome.18

CONFLICTS OF INTEREST

None declared.

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