

Editorial

“No Country for Old Men” With ST-segment Elevation Myocardial Infarction



«No es país para viejos» con infarto agudo de miocardio y elevación del segmento ST

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Age discrimination—known in English as ageism and rendered in Spanish by the European Commission as “edadismo”—is the stereotyping of and discrimination against individuals or groups on the basis of older age. Ageism can be defined as a set of prejudices, stereotypes, and discriminatory practices applied to older people simply because of their age.

The World Health Organization predicts that the world population of people older than 60 years will have grown from 900 million in 2015 to 2 billion by 2050, an increase from 12% to 22% of the total world population.¹ Spanish National Statistics Institute figures estimate that there are 4.1 million people in Spain older than 75 years, corresponding to 9% of the total population; moreover, if current demographic trends continue, this figure will increase to 9.5 million people by 2052, or 23% of the population.² By the middle of the 21st century, the life expectancy of persons older than 65 years could be an additional 24 years for men and 27 years for women. The age group predicted to expand the most in this period comprises people aged from 65 to 100 years, whereas the population of people aged 0 to 65 years is expected to decline.²

A recent epidemiological study calculated that among male patients with acute coronary syndrome (ACS), 37% of all cases and 59% of ACS-related deaths in 2013 affected patients older than 75 years. Among women, 66% of ACS patients and 83% of ACS-related deaths were in this age group. Moreover, from 2013 to 2049, the number of men and women older than 75 years with ACS is predicted to increase by between 69% and 116%.³

Because of their characteristics, elderly ACS patients are at especially high risk. In the first place, they have a high prevalence of comorbidities. Diagnosis can be difficult due to the atypical symptoms common among elderly ACS patients and the difficulty of studying ischemia by noninvasive means. This population is also underrepresented in clinical studies, is less likely to receive recommended treatments, and has a higher risk of intraprocedural complications during revascularization.

Against this background, the data from the Estrofa IM +75 Registry are especially welcome.⁴ This registry is a contemporary multicenter series including more than 3500 patients older than

75 years with ST-segment elevation ACS (STEACS) and treated with primary balloon angioplasty. Overall, this registry reveals high short- and long-term mortality in this population. Moreover, the authors identify a set of predictive factors related to patient status (diabetes mellitus, kidney disease, atrial fibrillation, ventricular dysfunction, and Killip class) and others related to the treatment received (use of the radial route, bivalirudin therapy, placement of a drug-eluting stent, delay between symptom onset and angioplasty, Thrombolysis In Myocardial Infarction [TIMI] grade 3 flow, and completeness of revascularization).

The effect of comorbidities on patient prognosis is generally quantified with the Charlson comorbidity index, which can be adjusted for age.⁵ This index estimates the influence of more than 20 variables on short- and long-term mortality and has been validated in several clinical situations, including aortic stenosis,⁶ infectious endocarditis, pulmonary thromboembolism, and definitive pacemaker placement. In the Nobori-2 study (a multicenter observational study evaluating the efficacy of Nobori drug-eluting stents in routine clinical practice), a Charlson index ≥ 2 is associated with higher rates of short- and long-term mortality and cardiac events after coronary angioplasty.⁷ However, STEACS patients in this study accounted for only 12% of the total. Recently, the ISACS-TC registry (International Survey of Acute Coronary Syndromes in Transitional Countries) revealed a lower incidence of invasive treatment in patients older than 75 years and identified the presence of comorbidities as a predictor of nonintervention.⁸ Patient dependency and frailty is evaluated by the Barthel index of activities of daily living. Analyzed after percutaneous intervention, this index is a predictor of 1-year mortality in ACS patients receiving coronary angioplasty.⁹ Although the Barthel and Charlson indices could both help to identify those patients who would most benefit from invasive therapy, their use can be complex and difficult in STEACS patients, who require immediate treatment; this is particularly concerning when there are no family members present to confirm the patient's baseline status.

Once selected, an invasive procedure must be conducted in a precise and individualized manner. The use of radial access has been shown to reduce the incidence of bleeding and cardiac events during primary angioplasty and to result in a lower rate of vascular complications in elderly patients.^{10,11} One of the complications most associated with age is contrast nephropathy, with age > 75 years being one of strongest influences on overall risk in the

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Mehran index.¹² Recommended steps to minimize this risk and improve patient prognosis include careful control of patient hydration, avoiding the use of nephrotoxic drugs, and limiting the use of contrast agents. The use of drug-eluting stents also currently appears to produce a better outcome, even in the elderly. In the XIMA study of patients in their 80s (Xience or Vision stents for the Management of Angina in the Elderly), placement of an everolimus-eluting stent was associated with reduced rates of infarction and target-vessel revascularization, with no increase in the bleeding incidence.¹³ In the Examination study, the patient population older than 75 years and receiving a drug-eluting stent had lower incidences of target-vessel reinfarction and in-stent thrombosis than patients receiving a conventional stent, while showing no increase in bleeding incidence.¹⁴ A recent substudy examined ACS patients included in the LEADERS FREE study, a prospective randomized double-blind comparison of the BioFreedom drug-coated stent vs the Gazelle bare-metal stent in patients at high bleeding risk using a short (1 month) course of dual antiplatelet therapy. The LEADERS FREE ACS substudy showed that the polymer-free biolimus-coated stent was more effective than the conventional stent (better revascularization of the treated vessel) and safer (less stent thrombosis and lower cardiac mortality); up to 70% of patients included in this substudy were older than 75 years.¹⁵

Age can thus increase risk in patients presenting with STEACS, and evaluation of comorbidities in elderly patients should be a key priority. The various indices (Charlson, Barthel, Mehran, etc) can help to quantify prognosis and select the best therapeutic strategy. Independently of patient age, when an invasive strategy is indicated, the optimal and safest procedures should be used (radial access, drug-eluting stent, complete revascularization, etc) in order to minimize long-term procedural risks such as contrast nephropathy and bleeding. In this increasingly prevalent segment of the population, it is more than ever important to apply the medical-ethics principles of autonomy (respect for patient preference), benefit (acting in patients' best interests), nonharm (minimizing risk and avoiding injury), and justice (equality in resource allocation).

CONFLICTS OF INTEREST

None declared.

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