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Outcomes of nonagenarians with ST elevation myocardial infarction

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Background: Developed countries are facing a sustained increase in life expectancy. Elderly people represent the fastest growing portion of cardiovascular patients. However, nonagenarians with ST-segment elevation myocardial infarction (STEMI) are often underrepresented in clinical trials as prolonged follow-up may be compromised by limited life expectancy. The aim of this retrospective study is to analyse the clinical presentation, risk factors, co-morbidities, outcomes of nonagenarian patients presenting with STEMI.

Methods: We included all consecutive nonagenarians presenting with STEMI admitted in 2 academic centers between 2007 and 2017. There were no exclusion criteria. We collected demographic, clinical, and procedural data. All-cause mortality was assessed in-hospital, at 6 months and at 1-year follow-up.

Results: A total of 140 patients (mean age 91.6 years [91.3–92]; 59% females) were included. The number of patients increased over the years (from 6.5 cases per year before 2012 to 14.4 cases per year after 2012). One out of 5 patients presented disability or dependence for activities of daily living (ADL). Emergent catheterization was performed in 70% of our patients, and primary percutaneous coronary intervention (pPCI) in 57%

(n=80). The use of bare metal stent was preponderant (72%) in this cohort. Successful revascularization of the culprit vessel was achieved in 90% of patients. Dual antiplatelet therapy with aspirin and clopidogrel was used in 97% of patients. Overall, in-hospital mortality was 22%, increased up to 27% at 6 months and up to 34% at 1-year follow-up. In-hospital mortality was lower in pPCI group than in conservative group (13.7% versus 31.6%, adjusted OR: 0.17, 95% CI: 0.04–0.67, $P < 0.01$). One-year mortality was also lower in pPCI group than in conservative group (26% versus 45%, $P < 0.01$). Multivariable analysis identified mechanical complications (adjusted OR: 28.1, 95% CI: 3.18–247.7, $P < 0.01$), Killip class (III/IV) (adjusted OR: 4.19, 95% CI: 3.37–22.3, $P < 0.01$) and pPCI (adjusted OR: 0.40, 95% CI: 0.16–0.95, $P < 0.05$) as independent predictors of all-cause mortality at 1 year.

Conclusions: STEMI in nonagenarians is becoming more and more common. pPCI may be also the preferred strategy in this high-risk cohort. The hemodynamic compromise (Killip class III/IV), the presence of complications related to myocardial infarction and early revascularization may be related to prognosis of these patients.

