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Increased Use of Cardiovascular Drugs Explains Recent Trends in Prognosis after Myocardial Infarction

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Background: The uses of statins, beta-blockers (BB), and angiotensin converting enzyme-inhibitors (ACEI) or angiotensin-II-receptor blockers (ARB) after myocardial infarction (MI) have been increasing over the past decade. Little is known, however, about the recent trends in long-term prognosis after MI, and whether increasing use of cardiovascular medications contributed to improvement of survival after MI.

Methods: We identified 21,848 patients hospitalized for MI who survived \geq 30 days after discharge using data from Medicare and pharmacy assistance programs in two states (1995-2004). We assessed age, gender, race, comorbidities, length of stay and use of coronary interventions during the MI hospitalization as well as filled prescriptions for any statin, BB, ACEI/ARB or antiplatelet agents within 30 days after discharge. We followed all patients from the index date (30 days after discharge) until they died, or the end of eligibility/study period. Multivariate Cox regression was used to study trends in long-term mortality. To assess the contribution of the use of the recommended drugs and coronary interventions after MI, we sequentially introduced these variables into the fully-adjusted models and evaluated the change in adjusted hazard ratios (aHR) for calendar year.

Results: Of 21,484 patients identified, we observed 12,142 deaths during 74,982 person-years of follow-up. After adjusting for demographics and comorbidities, the mortality after MI decreased significantly from 1995 to 2004 (aHR for trend=0.97; 95% CI 0.97-0.98), corresponding to a 3% reduction in mortality each year. After introducing variables for statin, BB, ACEI/ARB or antiplatelet drug use, calendar year was no longer associated with mortality (aHR for trend=1.00; 95% CI 0.99-1.01), indicating that the observed improvement in mortality after MI was explained by increasing use of these drugs. We also observed a smaller attenuation of the effect of calendar year after adjusting for MI-related procedures.

Conclusions: Long-term prognosis in elderly patients with MI has improved considerably over time, which appeared to be fully attributable to increasing use of cardiovascular medications after MI.

