

Some heart attack rates declining and survival improving

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Coronary syndromes vary in severity, ranging from unstable angina, non-ST segment elevation myocardial infarction (NSTEMI), to ST-segment elevation myocardial infarction (STEMI), the most severe diagnosis. Little data exist about changing trends in acute myocardial infarction and whether death rates are increasing or decreasing. In a study published in the January 2011 issue of *The American Journal of Medicine*, investigators found that STEMI rates decreased and one-year post-discharge death rates decreased in NSTEMI and STEMI patients.

"The results of this study demonstrate recent decreases in the magnitude of STEMI, slight increases in the incidence rates of NSTEMI, and decreases in long-term mortality in patients with STEMI and NSTEMI," commented lead investigator, David D. McManus, MD, FACC, Departments of Quantitative Health Sciences and Medicine, Division of Cardiovascular Medicine, University of Massachusetts Medical School, Worcester. "Our findings suggest that [acute myocardial infarction](#) prevention and treatment efforts have resulted in favorable decreases in the frequency of STEMI and death rates from the major types of acute [myocardial infarction](#)."

Using data from the Worcester Heart Attack Study, an ongoing population-based investigation examining long-term trends in the incidence rates, in-hospital, and post-discharge case fatality rates (CFRs) of greater Worcester, Massachusetts, researchers examined the medical records of 5,383 patients hospitalized for either STEMI or NSTEMI between 1997 and 2005 at 11 greater Worcester medical centers.

Trained physicians and nurses abstracted demographic and clinical data, including patient's age, sex, and, medical history (including previous MI events). Information about the use of important cardiac medications, coronary angiography, percutaneous coronary interventions (PCI), and [coronary artery bypass graft surgery](#) was also collected. Any records of various clinical complications during hospitalization were noted. Survival status after hospital discharge was determined through a review of medical records and search of death certificates. Some form of follow-up after hospital discharge was obtained for more than 99% of discharged patients.

The incidence rates per 100,000 population of STEMI decreased from 121 to 77 between 1997 and 2005. A significant increase in the NSTEMI incidence rates occurred in 2001, after which point NSTEMI incidence rates decreased. Overall, there was a slight increase in the incidence rates of NSTEMI between 1997 and 2005. There were notable differences in treatment utilization trends. A greater increase in the hospital use of beta-blockers was noted among patients with NSTEMI, whereas a greater increase in the use of angiotensin converting enzyme inhibitors/angiotensin receptor blockers, cardiac catheterization, and PCI was noted in patients with STEMI.

Encouraging declines in 1-year death rates were observed for patients with STEMI or NSTEMI. The odds of dying during the first year after hospital discharge decreased steadily among patients with STEMI between 1997 and 2005. By 2005, the odds of dying within 1 year after discharge was 50% lower among STEMI patients in comparison with those admitted in 1997; a non-significant and inconsistent trend toward lower odds of dying within 1 year of hospitalization was noted among patients with NSTEMI.

Dr. McManus stated, "Mortality from NSTEMI remained significantly higher than STEMI at both 30 days and 1 year. The higher long-term

death rates observed in patients discharged after NSTEMI may have resulted from the fact that patients with NSTEMI were in general older and had a greater burden of cardiovascular comorbidities. Under-utilization of effective cardiac medications and PCI, as well as greater delays in the time to receipt of PCI in patients with NSTEMI, may also have contributed to differences in the post-discharge death rates observed in these patients."

He continued, "Increased attention needs to be directed to secondary prevention practices in the hospital and post-discharge management of patients hospitalized with NSTEMI because the proportion of NSTEMI patients receiving effective cardiac therapies lags behind those with STEMI."

More information: The article is "Recent Trends in the Incidence, Treatment, and Outcomes of Patients with STEMI and NSTEMI" by David D. McManus, MD, FACC, Joel Gore, MD, FACC, Jorge Yarzebski, MD, MPH, Frederick Spencer, MD, Darleen Lessard, MS, and Robert J. Goldberg, PhD. It appears in *The American Journal of Medicine*, Volume 124, Issue 1 (January 2011).

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