Factors associated with improvement in survival following heart attack

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Among nearly 400,000 patients hospitalized with a certain type of heart attack in England and Wales between 2003 and 2013, improvement in survival was significantly associated with use of an invasive coronary strategy (such as coronary angiography) and not entirely related to a decline in baseline clinical risk or increased use of pharmacological therapies, according to a study published online by *JAMA*. The study is being released to coincide with its presentation at the European Society of Cardiology Congress 2016.

There has been a global decline in the rates of death following acute coronary syndrome (conditions such as heart attack or unstable angina); however, the extent to which this is due to use of guideline-indicated treatments for management of non-ST-elevation myocardial infarction (NSTEMI; a type of heart attack with certain findings on an electrocardiogram) is not known. Marlous Hall, Ph.D., of the University of Leeds, Leeds, England, and colleagues analyzed data on 389,057 patients with NSTEMI in 247 hospitals in England and Wales. Among these patients, there were 113,586 deaths (29 percent). From 2003-2004 to 2012-2013, proportions with intermediate to high clinical risk (patient factors such as cardiac arrest, elevated enzyme levels, systolic blood pressure, heart rate) decreased (87 percent vs 82 percent); proportions with lowest risk increased (4.2 percent vs 7.6 percent). The prevalence of diabetes, hypertension, cerebrovascular disease, chronic obstructive pulmonary disease, chronic renal failure, previous invasive coronary strategy, and current or ex-smoking status increased. Unadjusted all-cause mortality rates at 180 days decreased from 10.8 percent to 7.6

percent.

Analysis indicated that improvements in survival were associated with use of an invasive coronary strategy (defined as coronary angiography, percutaneous coronary intervention [procedure such as stent placement], coronary artery bypass graft surgery), which was associated with a relative decrease in mortality of 46 percent. A reduction in baseline acute coronary syndrome risk, increase in comorbidities, and use of guideline-indicated pharmacological therapies did not fully explain improvement in survival.

The authors note that these findings should not be interpreted to indicate that medical therapies have no role in management of NSTEMI. In this study group, aspirin, P2Y12 inhibitors, beta-blockers, angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, and statins each had a significant association with improved survival.

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