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Epidemiology and clinical outcomes of acute MI in hospitalized patients for non-cardiac conditions: A retrospective cohort study

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Introduction: Acute Myocardial Infarction (AMI) may occur incidentally or as a complication of an acute non cardiac pathology in patients admitted with a non-cardiac diagnosis, but its incidence, clinical presentation, risk factors and prognostic importance are not well defined. The limited available data in the literature suggest this constitutes an important subgroup of patients with AMI with non-typical clinical presentations, challenging management due to co-morbidities and high in-hospital mortality. Current clinical guidelines provide limited insight into the specific needs of this high-risk population. More extensive studies on this subset of AMI patients are required to improve opportunities in their clinical management.

Methods: We conducted a retrospective analysis of medical and surgical patients admitted to Danbury Hospital from 2007 to 2012 with a non-cardiac diagnosis. Patients who developed in-hospital acute coronary syndrome were identified. Clinical characteristics, admission and discharge diagnosis, timing and type of myocardial infarction, therapeutic approach as well as limitations to standard AMI treatment were documented. In hospital and long term mortality were recorded. We conducted univariate and multivariate analysis of clinical parameters and identified predictors of mortality.

Results: Among 38,324 patients admitted with a non-cardiac diagnosis 208 (0.005%) patients experienced AMI during the index admission. The mean age of the cohort was 75.9 ± 11.8 years, 101 were male (49%). 141 (68%) had a medical and 73 (32%) a surgical admission diagnosis. 42 patients (20.3%) had STEMI and 166 (80.2%) NSTEMI. In-hospital mortality was 27% (n=56) one year mortality was 37% (n=77).

In multiple logistic regression analysis, sepsis (HR 2.33, CI 1.21-4.52, p=0.012), acute renal failure (HR 2.42, CI 1.30-4.52, p=0.006), acute CHF not present on admission (HR 2.10, CI 1.10-3.98, p=0.024), STEMI (HR 4.40, CI 2.15-9.00, p=0.001), contraindications to cardiac catheterization or PCI (HR 2.31, CI 1.23-4.32, p=0.009) ventricular arrhythmias (HR 2.90, CI 1.31-6.45, p=0.009) and hypotension defined as SBP<90 (HR 6.50, CI 3.26-13, p=0.001) were associated with increased mortality in hospital and 1 year mortality.

Conclusions: Acute myocardial infarction in patients hospitalized for non-cardiac reasons is an uncommon clinical occurrence with high mortality in hospital and 1-year mortality. Possible delays in diagnosis and limited treatment options as a result of concomitant acute pathology may account for the poor outcomes. There is limited data in the literature on this subset of patients with Acute MI. More extensive studies are required in order to delineate their optimal clinical management and improve outcomes.

Biography

Athanasios Smyrliis obtained his MD degree, summa cum laude, from the University of Ioannina Medical School in Greece. He completed his Internal Medicine training at the Albert Einstein Medical Center in Philadelphia and his Cardiology training at the Western Connecticut Health Network, a Yale School of Medicine affiliate. He is the recipient of over twenty scholarships and awards for academic excellence. He has several publications in reputed journals and serves as a regular reviewer for multiple cardiology journals including the International Journal of Cardiology.

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