Abstract: P2717

Type-II MI and chronic myocardial injury rates, invasive management and 4 year mortality among consecutive patients undergoing high sensitivity troponin T testing in the emergency department

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Topic(s):
Coronary Artery Disease : Noninvasive Diagnostic Methods

Citation:
Background: In emergency departments (EDs), assessment of patients with suspected acute coronary syndromes (ACS) represents a major workload and high sensitivity troponin (HsTn) T and I levels are frequently measured. A minority of patients have final diagnosis of myocardial infarction (MI).

Methods and Results: Among 2738 consecutive patients with suspected ACS presenting to ED at Liverpool Hospital, Australia, between March and June 2014, we determined the relative frequencies of 3 patient groups: type-I MI, type-II MI including chronic myocardial injury (CMI), and assessed the use of invasive and pharmacological therapies and 4-year outcomes. Adjudication of MI was according to the 4th universal definition of MI as follows: 1) type-I MI; 2) type-II MI (including acute myocardial injury), and 3) CMI. Of 995 patients (36%) median age 76 years [IQR 65-83]), with at least 2 HsTnT measurements and one >14ng/l, 727 (73%) had chronic myocardial injury, 171 (17%) had type-II MI; and 97 (9.7 %) had type-I MI. Patients with type-I MI (mean age 63 years) were younger than those with type-II MI or chronic myocardial injury by 12 and 14 years respectively. The main triggering factors for type-II MI/acute injury included: sepsis (21.1%), acute heart failure (18.3%), tachyarrhythmia (16.9%), anaemia (8.6%) and a combination of factors (16%). In-hospital angiography (62% had PCI) rates were 95% for patients with type-I MI, 24% (7% PCI) for those with type-II MI and 3.4% for CMI. Mortality at 4 years was 55% for type-II MI, 44% for CMI and 18% for type-I MI (P<0.001; Figure), though after Cox modelling adjusting for age, gender, renal function and COPD, compared to type 1 MI, type-II MI (hazard ratio 1.61 [95% CIs 0.90-2.86]; p=0.106) and CMI (hazard ratio 1.01 [95% CIs 0.59-1.74]; p=0.963) were not independently associated with increased late mortality, largely because patients with type 1 MI were a decade younger.

Conclusion: Among unselected patients undergoing HsTnT testing in EDs, type-II MI including acute myocardial injury was more common than type-I MI. Chronic myocardial injury, which occurred in 3 of 4 patients. While patients with type-II MI acute myocardial injury had higher late mortality rates than type-I MI, though after multivariable analyses mortality rates were not different.
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