Abstract: P852
Frequency and prognosis of type 2 myocardial infarction vs non ischemic myocardial injury: large observational study from an emergency department

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Background: Type 2 Myocardial Infarction (T2MI), due to myocardial oxygen supply-demand mismatch in the absence of atherothrombosis and non-ischemic myocardial injury (NIMI), corresponding to troponin elevation without overt ischemia, are emerging concepts which are suspected to be common in patients hospitalized. However, their respective frequencies, risk profiles and short term prognosis in current routine clinical practice of emergency unit remains to be investigated.

Methods: Among the medical records of all the patients admitted from January 2014 to December 2016 in a university hospital emergency unit (n=82 543), patients with elevated troponin Ic (≥0.10μg/L) (n=4568) were systematically adjudicated as T2MI in the presence of symptoms or signs of myocardial ischemia (typical chest pain and/or ECG changes), or as NIMI without such signs. Patients with missing biological data on admission (n=112) or T1MI diagnosis (n=2467) were excluded.

Results: Among the 1989 patients included, 539 (27%) were classified as T2MI and 1450 (73%) as NIMI. When compared with patients with NIMI, T2MI had higher troponin levels (0.27 (0.14–0.71) vs 0.22 (0.13–0.54) μg/L, p=0.008, respectively). NIMI and T2MI had similar risk factors (age (84 (74–90) vs 84 (75–91) y, p=0.3), male sex (43 vs 48%, p=0.07), hypertension (67 vs 71%, p=0.133), diabetes (25 vs 25%, p=0.9), prior CAD (24 vs 26%, p=0.342), systemic inflammatory response syndrome (SIRS, 47 vs 49%, p=0.3), and systolic blood pressure (SBP) (130 (111–153) vs 132 (112–153) mmHg, p=0.545). Biological data on admission were also similar (hyperglycemia (glucose ≥11 mmol/L), 14 vs 13%, p=0.37, creatinine (96 (72–148) vs 94 (72–141) μmole/L, p=0.598), anemia (Hemoglobin rate ≤10g/dL, 13 vs 14%, p=0.5), C-reactive protein elevation (CRP ≥3 mg/L, 88 vs 89%, p=0.7)). Moreover, in-hospital mortality was high and similar for both groups (15 vs 18%, p=0.2). In multivariate analysis, age, troponin rate, SIRS, anemia, SBP, hyperglycemia, creatinine and CRP elevation were independent factors associated with hospital mortality, but not T2MI (vs NIMI) (OR: 0.88 (0.66–1.17)). Older age and hyperglycemia were specific covariates associated with increased risk of mortality in T2MI, but not in NIMI.

Conclusions: This large real-life study of non-T1MI inpatients with elevated troponins from emergency department shows that myocardial injury without necrosis and T2MI share the same risk factors, characterized by a high rate of infections and anemia and a high risk of hospital mortality.