

ACS-like Myocarditis vs. Acute Myocardial Infarction: Continuous Clinical Challenge

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Background:

Myocarditis with an acute coronary syndrome (ACS)-like presentation poses an important clinical challenge in the differential diagnosis of acute myocardial infarction (AMI). Comparing ACS-like myocarditis with AMI patients can shed a light on the similarities and the important differences between the two clinical syndromes.

Objective:

To compare the clinical, laboratory and echocardiographic characteristics of patients with ACS-like myocarditis and acute myocardial infarction.

Methods:

We conducted a retrospective analysis comparing consecutive patients, hospitalized at the Sheba Heart Center, with cardiac magnetic resonance (CMR)-proven ACS-like presenting acute myocarditis and non-ST elevation myocardial infarction (NSTEMI) between February 2002 and May 2012. The AMI group included patients with NSTEMI, without prior structural heart disease. Elderly NSTEMI patients (age>65) were excluded to achieve a degree of matching between the cohorts.

Results:

One hundred and one consecutive patients with CMR confirmed myocarditis were included along with 124 consecutive patients with first NSTEMI, average age of 33.9 ± 12.5 vs. 52.4 ± 7.6 respectively ($p < 0.001$). Cardiac risk factors were significantly more prevalent in the AMI group ($p < 0.001$). The average ejection fraction was 54.0% and 54.6% respectively (NS), with similar prevalence of localized regional wall motion abnormality (WMA) and average WM score index of 1.2 in both study groups. The cardiac biomarkers were markedly higher in the myocarditis group including peak troponin I (14.5 vs. 5.9, $p < 0.001$), peak CPK (648.5 vs. 447.5, $p = 0.008$). In-hospital clinical outcome parameters such as hemodynamic instability and pulmonary congestion were similar while we found a trend towards more tachyarrhythmia in patients with myocarditis (8 vs. 4, $p = 0.07$).

Conclusion:

Localized regional WMA is as prevalent in ACS-like myocarditis as in AMI patients, emphasizing the diagnostic dilemma between the two entities. Interestingly, we show significantly higher cardiac biomarkers elevation for the same extent of myocardial dysfunction in patients with acute myocarditis compared to myocardial infarction.