

Mural Thrombus after ST Elevation Myocardial Infarction. Still Dangerous?

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Background and Aims: Mural thrombus was a frequent complication described in 20% of STEMI pts in the pre-reperfusion era. Its incidence, predictors and consequences in the current era of reperfusion and intense antithrombotic therapy are incompletely understood.

Methods: We retrospectively identified 761 STEMI pts admitted between 2003 to 2008 who had moderate to severe left ventricular systolic dysfunction. Patients with mural thrombus [MT (41 pts, 5.4%)] and without it [nMT (715 pts, 94.6%)] were compared. Demographic, clinical, angiographic, angioplasty and echocardiographic characteristics were studied. Multivariate analysis was performed to identify predictors of mural thrombus and for the impact of mural thrombus on one year mortality

Results: MT and nMT patients did not differ significantly in terms of age (61 ± 13 vs. 62 ± 14) and gender (male: 83% vs. 76%). The use of primary PCI (63% vs 63%) and thrombolysis (11% vs 12%) was also similar. The use of warfarin before the admission (2.4% vs 3.4%) or clopidogrel (80% vs 73%) and aspirin (90% vs 92%) at discharge was similar in the MT and nMT groups. A trend for a higher prevalence of diabetes mellitus (33% vs 20%, $p=0.09$) and obesity (40% vs 25%, $p=0.08$) was seen in the nMT pts. Patients with MT more frequently had severe LV dysfunction in comparison to the other patients (46% vs 31%, $p=0.03$).

One year mortality was similar in MT (7%) and nMT (12%) patients ($p=ns$). A multivariate analysis found that MT was not an independent predictor of one year mortality after STEMI [OR: 0.6 (0.1-4.8.)] Severe LV dysfunction was the only independent predictor of mural thrombus formation [OR: 1.9 (1.03-3.68)]. In such analysis reperfusion therapy was not associated to mural thrombus development (OR: 1.1 (0.5-24)).

Conclusion: A mural thrombus after STEMI is currently observed in about 5% of patients with moderate – severe LV dysfunction. Its frequency increases with the severity of LV dysfunction but it has a minimal impact on survival. In this selective group of patients mechanical or pharmacological reperfusion had not influence on the mural thrombus formation.