In-Hospital Occurrence of Intracavitary Left Ventricular Thrombus Formation Following an Acute Anterior Myocardial Infarction in Patients Treated with Primary PCI and Continuous Anticoagulation

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Background: The occurrence of left ventricular thrombus (LVT) after acute anterior myocardial infarction (AAMI) is reportedly 20-60%. This rate decreased significantly with thrombolysis and even more (to 10-20%) with primary percutaneous intervention (PCI). We reasoned that prolonged anticoagulation following primary PCI will further reduce the incidence of LVT.

Objective: To assess the occurrence of LVT formation in patients hospitalized for an anterior ST-segment elevation MI (STEMI) and treated with primary PCI and continuous anticoagulation.

Methods: Our practice is to continue heparin anticoagulation for 48 hours followed by adjusted doses of low molecular weight heparin until discharge on day 5 to all patients who undergo PCI for STEMI. An echocardiogram is performed shortly after admission, and those with an AAMI have another one before discharge. We reviewed the records of all patients with an AAMI admitted between January 2006 and October 2008 for the presence of LVT.

Results: 211 consecutive patients (mean age 61 ± 13 years, range 29-92; 82% male) were included. The first echocardiogram was performed within 1.2 ± 0.9 days of admission and the second after 5.8 ± 3.6 days. Their mean admission LV ejection fraction was 41 ± 6.0% (range 20-60%). LVT was demonstrated on the initial echocardiogram of 5 patients (2%) and on the second echocardiogram of another 6 patients (2.7%).

Conclusion: Primary PCI followed by continuous anticoagulation therapy throughout hospitalization significantly reduces the occurrence of LVT in patients who present with AAMI-STEMI. Determination of the exact contribution of prolonged in-hospital anticoagulation awaits randomized prospective trials.