Angiographic Features of Spontaneously Reperfused MI: Illusion of Reperfusion in the Era of PCI

Loncar, Sasa; Danenberg, Haim; Pollak, Arthur; Varshitzky, Boris; Lotan, Chaim; Alcalai, Ronny
Hadassah-Hebrew University Medical Center, Jerusalem, Israel

Introduction: About 30% of patients with STEMI presents with spontaneous reperfusion (SR), even before initiation of reperfusion therapy. It is a prognostic factor that dramatically improves myocardial salvage and reduces infarct size, mortality and morbidity. The clinical and angiographic characteristics of these patients, timing for angiography and intervention are not well defined.

Methods: We investigated the subgroup of STEMI patients with SR that did not receive immediate reperfusion therapy. SR was defined as resolution of chest pain and at least 50% decline of ST segment elevation. We assessed the angiographic and clinical characteristics of these patients as well as Major Adverse Cardiac Events (MACE) in hospital and after one year.

Results: Out of 231 patients with STEMI admitted during 2008-2009, we identified 54 (23.4%) with SR. Mean age was 58.7 years and 92% were males. Average time from admission to angiography was 25 hours and dominantly involved artery was LAD (52%). Nine (16.7%) of them had TIMI flow in infarct-related artery of less than 3 and additional 3 (5.5%) patients with myocardial blush grade of less then 3. Severe residual stenosis was seen in 44 (81.5%) patients and visible residual thrombus in 19 (35.2%). Collaterals were developed in 8 (14.5%) patients. PCI was performed in all patients with success rates of 93%. One year MACE was 14.8% patients (1 death, 3 in stent thrombosis and 4 in stent restenosis).

Conclusion: STEMI patients with clinical evidence of spontaneous reperfusion had relative high rate of inadequate angiographic reperfusion and high percentage of severe residual stenosis and visual thrombus pointing out that clinical impression of reperfusion might be misleading in some cases. The best timing of coronary intervention is not yet clear, however our finding indicate performing intervention as early as possible in order to prevent recurrent ischemia and ongoing myocardial damage.