

Long-term outcome in patients with ST segment elevation myocardial infarction and multivessel disease treated with culprit-only, immediate, or staged multivessel percutaneous revascularization strategies: Insights from the REAL registry

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Abstract

OBJECTIVES:

To examine the differences in cardiac outcomes for patients with ST-elevation myocardial infarction (STEMI) and multivessel disease (MVD) as a function of whether they underwent culprit-only primary percutaneous coronary intervention (PPCI) or multivessel PCI, either during PPCI or as a staged procedure.

BACKGROUND:

MVD occurs in about 40% of patients presenting with STEMI, and it has been associated with a worse outcome compared to single-vessel disease. The most favorable PCI strategy for dealing with significant nonculprit lesions has to be established.

METHODS:

A total of 2061 STEMI patients with MVD undergoing PPCI, prospectively enrolled in the REAL Registry between July 2002 and December 2010, were considered: 706 underwent culprit-only PPCI; 367 multivessel PCI during the index procedure; 988 had a staged PCI within 60 days. Mortality and outcomes were calculated at 30 days and 2 years.

RESULTS:

At multivariate analysis, culprit-only PPCI was associated with higher rates of cardiac outcomes as compared to staged multivessel PCI, taken as reference [Hazard Ratio (HR): 2.81, 95% confidence interval (CI): 1.34-5.89, $P = 0.006$ for 30-day mortality, and HR: 1.93, 95% CI: 1.35-2.74, $P = 0.0002$ for 2-year mortality, respectively]. Short-term mortality rates were higher in multivessel PCI group as compared to staged PCI group (HR: 2.58, 95% CI: 1.06-6.26, $P = 0.03$); no differences were observed at 2-year follow-up (HR: 1.08, 95% CI: 0.64-1.82, $P = 0.76$).

CONCLUSIONS:

Our findings support the current guidelines recommendation to perform culprit-only PPCI in STEMI patients with MVD without hemodynamic compromise, followed by a staged PCI of noninfarct-related significant lesions.