Comparison of safety and long term outcome of staged versus non-staged repeat revascularization (PCI/CABG) within one year after primary percutaneous coronary intervention for ST-elevation myocardial infarction

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Purpose

Staged repeat revascularization procedures for residual non-infarct related lesions and non-staged repeat revascularization for new myocardial ischemia occur frequently after primary percutaneous coronary intervention (PCI). The impact of these procedures on outcome in contemporary clinical practice is not well elucidated. We determined the incidence, clinical characteristics and outcome of patients with staged and non-staged repeat revascularization procedures within one year after primary PCI for ST-elevation myocardial infarction (STEMI).

Methods

The Thrombus Aspiration during Percutaneous coronary intervention in Acute myocardial infarction Study (TAPAS) enrolled 1071 patients with STEMI who were randomized to thrombus aspiration or balloon angioplasty before stenting (bare-metal stent) and treated according to current guidelines. For this study, additional revascularization procedures after primary PCI and within 1 year were evaluated by two independent investigators. Repeat revascularization was classified as staged when the revascularization was planned after identification of a residual lesion at index PCI or as non-staged when revascularization was performed after occurrence of new myocardial ischemia. Mortality data were obtained at 25 months of follow-up.

Results

Of the 994 patients who were treated with primary PCI, 129 (13%) patients underwent a staged and 138 (14%) patients underwent a non-staged repeat revascularization within 1 year. Median time after index PCI was 8 days and 105 days, respectively.

Cardiac mortality at 25 months was 6.5% in the no-revascularization group, 3.9% in the staged group and 6.5% in the non-staged group (p=0.518). Stent thrombosis carried a mortality rate of 24% at 25 months.

In the non-staged group, 42% of patients presented with reinfarction, including all patients with stent thrombosis and only 7% of patients with restenosis. Independent risk factors for the need of non-staged repeat revascularization were ostial lesions and no thrombus aspiration at index PCI.

Conclusion

In these patients with STEMI treated with primary PCI, 27% received repeat revascularization (PCI/CABG) within 1 year. Patients who need a staged repeat revascularization procedure within one year after primary PCI for STEMI have excellent long-term outcome. Non-staged repeat revascularization procedures due to stent thrombosis are associated with a poor outcome.

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