

Which technique is suitable for management of acute myocardial infarction following coronary artery bypass surgery, rescue percutaneous coronary intervention or open heart surgery? A case-series study

Background: One of the serious complications following coronary artery bypass surgery is postoperative acute myocardial infarction commonly due to graft thrombosis, kinking, or spasm. Two recommended approaches for management of this event include Rescue percutaneous coronary intervention (PCI) and urgent open heart surgery. In the present case series, we described and compared early and long-term results of rescue PCI and reoperation in patients with three-vessel coronary artery disease undergoing CABG postoperatively and suffered acute myocardial infarction.

Method: Totally 10 patients suffered from post-CABG acute myocardial infarction who undergoing rescue PCI procedure (4 patients) or emergent reoperation (6 patients) within four-year period from 2008 to 2012 were reviewed. Final determination of ejection fraction was based on angiographic reports. CAD was considered significant if there was a 75% or greater stenosis in the cross-sectional diameter and 50% or greater stenosis in the luminal view.

Results: Preoperative information four patients (M/F = 2/2, mean age = 61.5 ± 14.1 years) underwent rescue PCI and six patients (M/F = 5/1, mean age = 63.0 ± 7.3 years) underwent reoperation for management of post-CABG myocardial infarction.

Regarding cardiovascular status, mean left ventricular ejection fraction in rescue PCI group and reoperation group was $46.25 \pm 12.50\%$ and $35.0 \pm 15.81\%$, and mean NYHA class of 2.50 ± 0.58 and 3.00 ± 1.10 , respectively with no significant discrepancy.

Postoperative outcome Comparing postoperative early and one-year outcome showed more favorable results in the group who underwent rescue PCI in comparison with reoperation (Table 2). myocardial infarction, multisystem failure, and renal insufficiency was not occurred in rescue PCI group, while this events was revealed in 66.7%, 16.7%, and 16.7% of patients in another group respectively. As morbidity was defined as the appearance of at least one postoperative complication, the early morbidity rate in the two groups was 25.0% and 50.0%, respectively. Early and long-term death was not occurred in the group undergoing rescue PCI, but early and late death was occurred in 2 and 3 of 6 patients in reoperation group, respectively.

Conclusion: despite presence of coronary risk factors and high severity of coronary involvement, rescue PCI can lead to proper early and long-term outcome in coronary artery disease patients in comparison with reoperation. Further studies with larger sample size and longer follow-up time should be performed to demonstrate appropriate clinical results following rescue PCI.