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Staged Percutaneous Coronary Intervention (PCI) for Multivessel STEMI Patients?

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Primary PCI is the treatment of choice for patients with STEMI since it results in greater patency of the infarct-related artery (IRA) and lower rates of re-infarction, stroke and death when compared with fibrinolysis alone[1]. Multivessel disease (MVD) occurs in 40% to 65% of patients with STEMI[2]. Is it possible for an aggressive multivessel percutaneous revascularization strategy may afford advantages in greater myocardial salvage and avoidance of staged procedures, with subsequent savings in compounded procedural risks.

Contemporary studies have produced controversial results. Previous retrospective non-randomized trials have shown that patients with STEMI who have undergone multivessel PCI have increased rates of re-infarction, need for revascularization[2] and stroke[3]. On the contrary a retrospective non-randomized trial and prospective randomized trial (with a small number of participants) have shown that patients with STEMI and multivessel PCI had similar incidence of death, re-infarction or target-lesion revascularization (TLR) compared with those with primary PCI of the IRA alone during hospital stay and at 12 and 36 months[4,5]. Furthermore, data of a large New York registry have shown that patients with STEMI that had multivessel PCI had significantly lower rates of MACE during hospital stay[6]. Recently a prospective study has compared different revascularization strategies in patients presenting with STEMI: a. culprit vessel PCI alone, b. revascularization of culprit plus additional vessels at the time of primary PCI, c. staging a second PCI during the initial hospital stay, d. staging a second PCI within 60 days. Patients having culprit vessel PCI alone had lower mortality rates compared with those who had revascularization of culprit plus additional vessels at the time of primary PCI. The same study has shown that had a staged PCI within 60 days is the best revascularization stategy[7]. There is no doubt that total revascularization is the treatment of choice for patients with STEMI and cardiogenic shock. Data from SHOCK trial have shown that 30-day and 6-month mortality is significantly lower in patients that had complete revascularizarion compared to those that received medical treatment only[8].

It is evident that there are no sufficient and convincing evidence that support multivessel PCI in the setting of a STEMI. Despite the fact that staged PCI during hospital stay is feasible it does not offer any substantial benefit. It seems that staged PCI within 60 days of index event is the best revascularization strategy for patients with MVD and STEMI. On the other hand total revascularization is the treatment of choice for patients with STEMI and cardiogenic shock.

KEY WORDS: *staged percutaneous coronary intervention (PCI); Multivessel diseases STEMI*

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