

## PCI during AMI: Complete vs. Culprit-only Revascularization

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For ST-segment elevation myocardial infarction (STEMI), primary percutaneous coronary intervention (PCI) with drug-eluting stent (DES) implantation is a standard treatment strategy. Nearly half of STEMI patients have concomitant stenosis in non-infarct related artery (IRA), and those patients have been well known to show worse prognosis than those without non-IRA stenosis. Nevertheless, routine multivessel PCI for non-IRA stenosis in STEMI patients was once considered inappropriate. However, in recently published randomized trials, STEMI patients who underwent multivessel PCI showed significantly better outcomes compared with IRA-only PCI. Based on these results, the latest European guideline recommends multivessel PCI as a class IIa recommendation.

Among STEMI patients, 5-10% of patients present with cardiogenic shock, and have higher in-hospital mortality than patients without cardiogenic shock. Although the guideline emphasizes the importance of complete revascularization in STEMI patients with cardiogenic shock, supporting evidence has been scarce and the recommendation was mainly based on expert consensus and pathophysiologic considerations. Although a few previous observational studies

compared clinical outcomes between multivessel PCI and IRA-only PCI in STEMI multivessel disease with cardiogenic shock, the results were inconclusive. Recently, the CULPRIT-SHOCK (Culprit Lesion Only PCI Versus Multivessel PCI in Cardiogenic Shock) trial reported 30-day clinical outcomes of 685 patients with STEMI with multivessel disease and cardiogenic shock who were randomly allocated into an angiography-guided immediate multivessel PCI or IRA-only PCI group. At 30 days, the multivessel PCI group showed significantly higher risk of all-cause death or new renal replacement therapy compared with the IRA only PCI group. We also investigated the impact of multivessel PCI for non-IRA stenosis in STEMI patients, who had multivessel disease and were accompanied by cardiogenic shock using a large-scaled nationwide, multicenter, prospective registry dedicated for acute myocardial infarction. The risk of all-cause death and non-IRA repeat revascularization was significantly lower in the multivessel PCI group than in the IRA-only PCI group. As real-world data reflecting contemporary practice, the results of this study support the current recommendation of the guidelines.