

## Collateral Circulation to the Infarct Related Artery Was Not Associated with Better Procedural and 6-month Clinical Outcomes of Patients Undergoing Primary Percutaneous Coronary Intervention for Acute Myocardial Infarction

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**Background:** During acute occlusion of an epicardial vessel, collateral circulation to the infarct related artery (IRA) preserve the microvascular perfusion and may limit the extent of myocardial damage. Therefore, we hypothesized that in patients undergoing primary percutaneous coronary intervention (PCI) for acute myocardial infarction (AMI), who's their initial TIMI flow is 0-1, the existence of collaterals would result in better outcomes, compared to those without collaterals.

**Method and Results:** We used our database of all pts undergoing primary PCI for AMI between 1/2001 and 7/2008, excluding those with cardiogenic shock and late arrivals (>12hrs from symptoms onset to 1<sup>st</sup> balloon inflation). Only patients with initial TIMI 0-1 flow were included in this analysis. Patients (n=436) were allocated into 2 groups: 1<sup>st</sup> Group (n=334 pts) included those without collaterals and 2<sup>nd</sup> Group (n=102 pts) included those with collaterals. Patients' clinical and angiographic characteristics as well as 6-month outcomes are shown in **Table:**

	No Collaterals	Collaterals	P Value
<b>N</b>	334	102	
<b>Age</b>	61±13	60±13	0.6
<b>Male (%)</b>	83	78	0.4
<b>Anterior AMI (%)</b>	46	39	0.4
<b>Diabetes (%)</b>	24	26	0.6
<b>Kilip &gt;1 (%)</b>	12	10	0.6
<b>Ischemic time (hours)</b>	4.6±3.1	4.3±2.6	0.4
<b>Distal embolization (%)</b>	13	12	0.8
<b>Myocardial blush 3 (%)</b>	80	85	0.7
<b>No/Slow Reflow incl. transient (%)</b>	8	5	0.3
<b>Successful procedure (%)</b>	93	92	0.8
<b>Peak CK (IU/L)</b>	2.4±2.2	2.0±2.0	0.2
<b>LVEF &lt;40% (%)</b>	47	42	0.3
<b>Six Months</b>			
<b>Death (%)</b>	5.8	6.3	0.9
<b>Stent thrombosis (%)</b>	3.1	0	0.1
<b>TVR / CABG (%)</b>	7.2 / 3.1	3.1 / 5.2	0.1 / 0.3
<b>MACE (%)</b>	15.9	12.5	0.4

**Conclusion:** Despite our hypothesis, the existence of collaterals to IRA in patients undergoing primary PCI for AMI was not associated with better procedural or 6-month clinical outcomes.