

Contemporary Unprotected Left Main PCI in Patients with AMI: Insight from KAMIR

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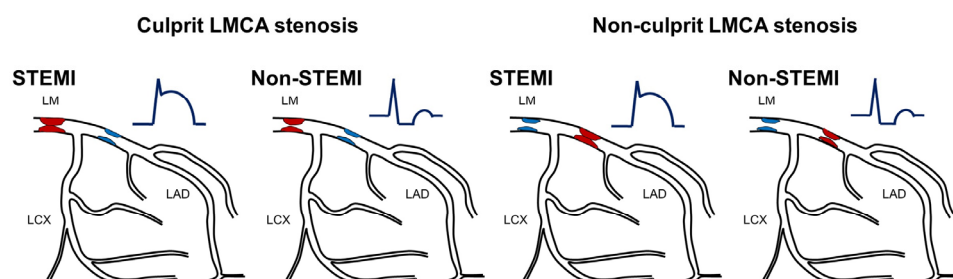
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Background/Aims: Limited data is available on clinical characteristics and outcomes in patients with culprit or non-culprit LMCA stenosis. The aim of this study is to compare treatment pattern and outcome between ST-segment elevation myocardial infarction (STEMI) and non-STEMI according to culprit and non-culprit left main coronary artery (LMCA) stenosis.

Methods: We examined 572 patients with LMCA stenosis from the Korean Acute Myocardial Infarction Registry–National Institute of Health database. Major adverse cardiac and cerebrovascular events (MACCE) were defined as all-cause death, nonfatal myocardial infarction (MI), repeat revascularization, cerebrovascular accident, rehospitalizations, and stent thrombosis.

Results: In patients with culprit LMCA stenosis, cardiogenic shock (50.5% vs. 12.1%; $p<0.001$) and use of mechanical hemodynamic support (48.5% vs. 11.0%; $p<0.001$) were significantly greater in STEMI than in non-STEMI. In-hospital mortality (32.3% vs. 8.1%, $p<0.001$) and 2-year MACCE (50.5% vs. 36.4%; log-rank $p=0.003$) were significantly higher in STEMI (Figure). Intravascular ultrasound improved outcomes of culprit LMCA stenosis (25.4% vs. 54.6%, log-rank $p<0.001$). Hypertension, acute kidney injury, multi-organ failure, and cardiopulmonary resuscitation were independently associated with MACCE in STEMI. In patients with non-culprit LMCA stenosis, there were no significant differences in MACCEs between STEMI and non-STEMI (21.3% vs. 20.8%, log-rank $p=0.743$). Concurrent percutaneous coronary intervention (PCI) for non-culprit LMCA stenosis during PCI for other culprit vessel segments improved MACCEs in non-STEMI (16.7% vs. 31.9%; log-rank $p=0.024$), but not in STEMI.

Conclusions: PCI for culprit LMCA stenosis is challenging in both STEMI and non-STEMI despite appropriate mechanical hemodynamic support. Concurrent PCI for non-culprit LMCA stenosis in STEMI does not improve MACCEs.



Culprit LMCA stenosis					Non-culprit LMCA stenosis				
STEMI		Non-STEMI			STEMI		Non-STEMI		
Cardiac complications									
Cardiogenic shock	+++++		++		++		++		++
VT requiring DC shock	+++		+		+		+		+
VF	++		+		+		+		±
Hemodynamic support									
CPR	+++++		++		++		++		++
IABP	++++		+		+		+		+
ECMO	+++		+		±		±		+
TPM	+		+		+		+		+
Outcome									
In-hospital mortality	++++		+		+		+		+
MACCEs at 2 year	+++++		++++		+++		+++		+++