MYOCARDIAL ISCHEMIA AND INFARCTION

PREDICTOR, IMPACT, AND PROGNOSTIC FACTOR OF ANGIOGRAPHIC NO-REFLOW PHENOMENON IN PATIENTS TREATED WITH DRUG-ELUTING STENT FOR ACUTE ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

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Background: We investigated the predictor and prognostic factor for no-reflow phenomenon in patients with acute ST-segment elevation myocardial infarction (STEMI) treated with drug-eluting stent (DES).

Methods: A total of 4612 consecutive patients (62.7±12.6 years, male 74.1 %) with STEMI who were registered in Korea Acute Myocardial Infarction Registry from Nov. 2005 to Dec. 2007 were enrolled. All of the patients underwent PCI. Angiographic no-reflow after PCI was defined as TIMI flow grade <3.

Results: No-reflow phenomenon after DES implantation occurred in 7.9 % of the patients. Patients with no-reflow were older, had higher Killip class, lower left ventricular ejection fraction, and more complex lesions, and needed longer intensive care. The levels of CK-MB, hs-CRP, and NT-proBNP were significantly higher in patients with no-reflow than those with normal reflow. Rates of in-hospital adverse events (IHAEs) and MACEs at 1 and 12 months were significantly higher in patients with no-reflow compared with those with normal reflow (IHAEs: 35.2% vs 15.5%, p<0.001; 1-month MACEs: 6.3% vs 2.6%, p=0.001; 12-month MACEs: 21.3% vs 15.3%, p=0.031). In multivariate analysis, no-reflow was an independent predictor of short-term (OR, 2.46, 95% CI 1.41-4.17, p<0.001) and long-term clinical outcomes (OR, 1.51, 95% CI 1.04-2.19, p=0.032). In addition, elevated NT-proBNP (OR, 2.46, 95% CI 1.41-4.17, p<0.001) and preprocedural TIMI grade 0/1 flow (OR, 2.15, 95% CI 1.22-3.79, p=0.043) were independent predictors of no-reflow. In no-reflow group, additive use of cilostazol lowered 1- and 12-month MACEs (OR, 0.59, 95% CI 0.38-0.91, p=0.016; OR, 0.60, 95% CI 0.36-0.99, p=0.043).

Conclusions: Angiographic no-reflow phenomenon after primary DES implantation for STEMI can be predicted by NT-proBNP levels. No-reflow was an independent predictor of increased mortality. NT-proBNP-guided approach may be useful in identifying patients at high risk of the no-reflow phenomenon after stenting and additive use of cilostazol was beneficial for short- and long-term outcomes in patients with no-reflow.