



MYOCARDIAL ISCHEMIA AND INFARCTION

INTRACORONARY NICORANDIL CAN IMPROVE MICROVASCULAR DYSFUNCTION FOLLOWING PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION: ITS SUPERIORITY TO INTRACORONARY NITROGLYCERIN

ACC Poster Contributions

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Background: In patients (pts) with ST-segment elevation myocardial infarction (STEMI), in whom reperfusion has been achieved by primary percutaneous coronary intervention (PCI), coronary microvascular dysfunction is closely related to the patients' long-term outcome. Although microvascular dysfunction following PCI can be evaluated with the baseline index of microcirculatory resistance (IMR), no method for its treatment has been established. Coronary microvascular resistance is predominantly regulated by ATP-sensitive potassium channels.

Methods: In 60 STEMI pts, baseline IMR was measured after successful PCI. Following baseline IMR measurement, 30 pts were administered Nicorandil (Nic) with intracoronary injection of 2mg (Group Nic), and the other 30 pts were given intracoronary Nitroglycerin (NTG) of 250µg (Group NTG). Then, post IMR was measured again at a steady state after hyperemia in both groups. IMR was measured by PressureWire™ Certus (St. Jude Medical, USA).

Results: There were no significant differences in pts and lesion characteristics, and in baseline IMR between the two groups. In all the pts, baseline IMR after PCI was very high (mean: 33.9U). Although post IMR were significantly decreased in both groups as compared to baseline IMR, the pts with Group Nic had lower post IMR and larger decreases in IMR than the pts with Group NTG.

Conclusion: Intracoronary Nic can improve microvascular dysfunction more effectively than intracoronary NTG in pts with STEMI after primary PCI.

Table

Changes in IMR in Group NTG (n=30) and Group Nic (n=30)

	Group NTG (n=30)	Group Nic (n=30)	P-value
Baseline IMR (U)	25.6 (18.8-40.0)	26.4 (18.7-41.3)	0.8883
Post IMR (U)	21.7 (14.5-36.1)	16.9 (11.1-21.4)	0.0351
Absolute changes (U)	2.1 (1.0-6.0)	10.8 (5.2-20.7)	0.0002

Values are median (interquartile ranges)

Baseline: immediately after PCI, Post: immediately after administration of NTG or Nic

Absolute changes were calculated as Baseline IMR - Post IMR.