Epidemiology, Prognosis, Outcome

The effect of pre-infarction angina on no-reflow phenomenon and in-hospital MACE in primary PCI patients

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Background: No reflow has detrimental outcomes in STEMI patients undergoing primary PCI (PPCI). It leads to poor post PCI LV function and higher mortality. The protective effect of ischemic pre-conditioning (clinically manifested as pre-infarction angina) was controversial in the literature.

Purpose: Our aim was to study the effect of pre-infarction angina on the occurrence of no-reflow phenomenon and in-hospital major adverse cardiac events (MACE) in PPCI patients.

Methods: After obtaining ethical approvals and informed consents, we prospectively studied 120 STEMI patients admitted for PPCI in a consecutive manner. Patients with history of CABG or previous PCI and in-stent restenosis were excluded. The definition of in-hospital MACE included cardiac death, myocardial reinfarction, stent thrombosis, or target vessel revascularization. The data were analysed by professional statisticians using SPSS software.

Results: 15 patients (12.5%) had no-reflow, 5 patients (4.2%) had cardiac death and one patient had both(0.8 %). The admission characteristics of the studied groups are presented in table 1. Pre-infarction angina was present in 43 patients in the normal flow group and 6 patients in the no-reflow/MACE group. The odds ratio for no-reflow/MACE in those who had pre-infarction angina was 0.52 (95% CI 0.19-1.45, P = 0.21).

Conclusion: In our studied group, pre-infarction angina has not shown to be protective against no-reflow and in-hospital MACE in PPCI patients. The loss of the protective effect of ischemic pre-conditioning might be secondary to higher admission random plasma glucose levels in our patients compared to those included in similar studies. Similar effect was previously shown in studies on mice. Further in-human studies are needed to confirm the negative effect of hyperglycemia on ischemic pre-conditioning.

Characteristics of studied groups

	Normal flow (n = 99)	No-reflow/MACE(n = 21)	P value
Age (mean ± SD)	56.3 ± 10.3	62.3 ± 7.9	0.014
Male sex (n)	75	13	0.19
Diabetes (n)	37	12	0.094
Hypertension (n)	48	7	0.21
Smokers (n)	52	9	0.42
Dyslipidemia (n)	54	15	0.16
Family history of IHD (n)	17	2	0.52
Pre-infarction angina	43	6	0.21
Admission random plasma glucose in mg/dl (mean ± SD)	186.4 ± 84.7	275.3 ± 104.1	0.001