BENEFIT OF MANUAL THROMBECTOMY IN LIMITING INFARCT EXPANSION DURING PRIMARY PERCUTANEOUS CORONARY INTERVENTION FOR ACUTE ST-ELEVATION MYOCARDIAL INFARCTION

I2 Poster Contributions
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Background: We sought to assess whether MT could reduce infarct size (IS) in patients with acute ST-elevation MI (STEMI) undergoing primary PCI.

Methods: Between April 2009 and April 2010, 40 consecutive patients presenting with first acute STEMI (Killip≤II) within 12 hours after the symptom onset were randomized to manual thrombectomy (MT) (group I, N=20) or conventional PCI without MT (group II, N=20). All patients received a 600-mg loading dose of clopidogrel before PCI and underwent delayed enhanced (DE) MDCT immediately after PCI without injection of an additional contrast media for assessment of IS, determined as the total volume of myocardium showing DE. DE MDCT was repeated at 2 months after PCI. The primary endpoint was IS reduction at 2 months.

Results: Baseline clinical characteristics and angiographic findings were similar between the two groups. The use of drug-eluting stents was similar, but GPI was less likely to be used in group I than group II (30.0% vs. 63.2%, p=0.038). Markers of myocardial reperfusion were better in group I but not statistically different: ST-resolution rate >70% (64.7% vs. 57.9%), myocardial blush grade 3 (85.0% vs. 68.4%), and corrected TIMI frame count <28 (27.8% vs. 15.8%). However, group I had more reduced IS measured by DE MDCT (15.6±15.8 ml vs. 29.5±25.2 ml, p=0.048) as well as biomarkers (CK: 1,447 U/L vs. 3,328 U/L, p=0.0004; CK-MB: 90 U/L vs. 177 U/L, p=0.010). LV ejection fraction (LVEF) after PCI was better in group I but not statistically significant (58.7±10.2% vs. 53.3±8.9%, p=0.086). In multiple linear regression analysis, correlates of IS were the presence of anterior MI (B=19.9, 95% CI=5.28~34.5, p=0.010) and the use of MT (B=13.3, 95% CI=25.7~−0.91, p=0.036). GPI use, total volume of contrast media, and time between the last contrast injection and CT scan were not associated with IS. At 2 months, clinical outcome was similar between the groups. Still, group I maintained reduced IS (13.1±8.5 ml vs. 20.9±10.5 ml, p=0.072) and improved LVEF (63.1±6.5% vs. 53.6±14.8%, p=0.042).

Conclusions: MT during primary PCI for acute STEMI was effective in limiting infarct expansion and improving LV function.