

Impact of total ischemic time on manual thrombus aspiration benefit during primary percutaneous coronary intervention

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BACKGROUND

The benefits of manual thrombus aspiration (TA) during primary percutaneous coronary intervention (pPCI) for ST-elevation myocardial infarction (STEMI) remain uncertain. We assessed the influence of total ischemic time (TIT) on clinical outcomes among STEMI patients undergoing manual TA during pPCI.

METHODS AND RESULTS

We conducted a retrospective study of patients enrolled in the Acute Myocardial Infarction in Switzerland Plus registry. STEMI patients undergoing pPCI with (TA group) or without (PCI-alone group) manual TA were stratified based on short (<3 hours), intermediate (3-6 hours), and long (>6 hours) TIT. The primary endpoint was in-hospital all-cause mortality. The secondary endpoint was in-hospital major adverse cardiac events (MACE), a composite of all-cause death, myocardial reinfarction and stroke. Between 2008 and 2014, 4'154 patients (TA 48%) were included. Risk-adjusted in-hospital all-cause mortality was not different between TA and PCI-alone groups (OR 1.29; 95%CI 0.83-1.98; $p=0.26$), whereas there was significantly increased risk of MACE (OR 1.52; 95%CI 1.05-2.19; $p=0.03$) in patients treated with manual TA compared with PCI-alone. There was no significant difference between manual TA and PCI-alone with respect to risk-adjusted all-cause mortality according to TIT groups, but risk-adjusted MACE rates were significantly higher in the group of patients with long TIT treated with manual TA compared with PCI-alone (OR 2.42; 95%CI 1.16-5.04; $p=0.02$).

CONCLUSION

In a large registry of STEMI patients, manual TA was not associated with lower risk-adjusted in-hospital all-cause mortality compared with PCI-alone regardless of TIT but was associated with significantly greater risk of MACE. In patients with prolonged TIT, manual TA was associated with higher risk-adjusted MACE rates compared with PCI-alone.

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