**SYSTEMATIC REVIEW OF THE UTILITY OF THROMBUS ASPIRATION IN PATIENTS WITH STEMI UNDERGOING PRIMARY PCI**

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*Background*: Earlier meta-analyses of randomized clinical trials (RCT) of in ST-elevation myocardial infarction (STEMI) patients undergoing primary percutaneous coronary intervention (PPCI) with or without manual thrombus aspiration (MTA) suggested that MTA improved markers of re-perfusion without a marked effect on all-cause mortality. Following the publication of the TOTAL trial, guidelines were changed and currently recommend against routine MTA. This study sought to update previous meta-analyses investigating the efficacy and safety of MTA in PPCI after the publication of the most recent data.

*Methods*: Major databases were searched through November, 15 2015. We included RCTs of STEMI patients randomized to PPCI with or without MTA. The primary efficacy outcome was all-cause mortality at 1 year, and the primary safety outcome was stroke rate 30 days after intervention. Meta-regression analysis was performed for important baseline and procedural characteristics.

*Results*: There was no difference in late mortality between MTA and conventional PPCI (14 RCTs, 20,627 patients): RR= 0.91, (95% CI 0.81-1.03), p=0.15. There was no difference in early stroke after MTA vs. PPCI (9 RCTs, 18,756 patients): RR= 1.47, (95% CI 0.99-2.17), p=0.057. There were no differences between the groups in recurrent MI, stent thrombosis or major bleeding. There was no impact of clinical or procedural characteristics on the effect of MTA on outcomes.

*Conclusion*: MTA does not impact significantly the outcome of PPCI, regardless of patient or procedural characteristics.