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MECHANICAL THROMBECTOMY USE IS ASSOCIATED WITH DECREASED MORTALITY IN PATIENTS TREATED WITH PRIMARY PERCUTANEOUS CORONARY INTERVENTION (9935 PATIENTS FROM THE LONDON HEART ATTACK GROUP)

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Introduction During Primary Percutaneous Coronary Intervention (PPCI) post ST-Segment Myocardial Infarction (STEMI), distal embolisation of thrombus may lead to failure to re-establish normal flow in the infarct-related artery. Manual thrombus aspiration has been shown to improve coronary perfusion as assessed by time to ST-segment resolution and myocardial blush grade. Evidence supporting the benefit of thrombus aspiration on clinical outcomes, however, is limited and inconsistent. We aimed to assess the impact of manual thrombectomy on mortality in patients presenting with STEMI across all PPCI centres in London over a 5 year period from 2007 until 2012.

Methods This was an observational cohort study of 9935 consecutive patients with STEMI treated with PPCI between 2007 and 2012 at eight tertiary cardiac centres across London, UK. Patient's

Table 1

	No thrombectomy	Thrombectomy	p Value
Gender (female)	1378 (22.8%)	606 (21.2%)	0.09
Diabetes	954 (16.7%)	398 (14.6%)	0.012
Age	62.9±13.2	60.6±13.1	p<0.0001
Previous myocardial infarction	811 (14.7%)	311 (11.9%)	0.001
Previous CABG	182 (3.1%)	73 (2.6%)	0.245
Previous PCI	671 (11.8%)	333 (12.1%)	0.622
Cardiogenic shock	375 (6.3%)	177 (6.3%)	0.988
GPIIb/IIIa inhibitor	3978 (68.8%)	2334 (87.0%)	p<0.0001
Access (radial)	1175 (19.9%)	936 (33.1%)	p<0.0001
Procedural Success	4566 (86.7%)	2259 (89.5%)	0.025

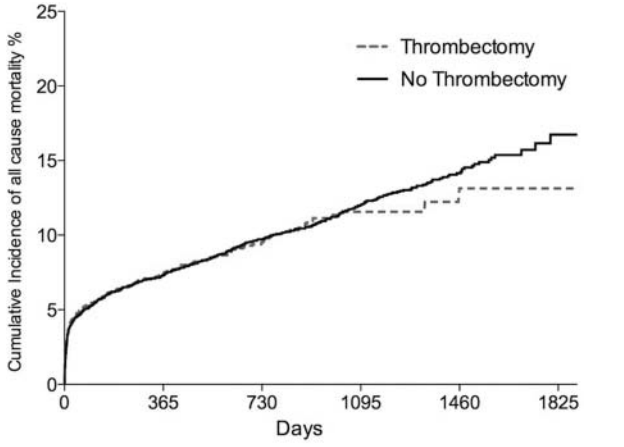

Figure 1 Kaplan-Meier curve showing cumulative probability of all-cause mortality according to thrombectomy use.

details were recorded at the time of the procedure into the British Cardiac Intervention Society (BCIS) database. Outcome was assessed by all-cause mortality. Anonymous datasets from the eight centres were merged for analysis. The primary end-point was all-cause mortality at a median follow-up of 2.0 years (IQR range 1.1–3.1 years).

Results Of the 9935 consecutive STEMI patients presenting for PPCI, 2859 had mechanical thrombectomy. Patients who had manual thrombectomy were significantly younger (average age 60.6 vs 62.9) and were less likely to have had a previous myocardial infarction (11.9% of thrombectomy patients vs 14.7% of non-thrombectomy patients). Patients receiving manual thrombectomy were found to be significantly more likely to have had PPCI via a radial approach (33.1% in thrombectomy patients vs 19.9% in non-thrombectomy patients). Procedural success (defined as TIMI 3 flow at the end of procedure) was found to be significantly more likely in patients receiving manual thrombectomy (89.5% vs 86.7%) (table 1). Patients with thrombectomy use had similar unadjusted all-cause mortality rates to those without thrombectomy use (12.7% vs 16.5%, p=NS) during the 5-year follow-up period (figure 1). After multivariable adjustment thrombectomy use was associated with significantly decreased mortality rates (HR: 0.82, 95% CI 0.68 to 0.9, p=0.04).

Conclusion Mechanical thrombectomy use appears to be associated with improved outcome, in the form of decreased mortality, in this large observational trial.