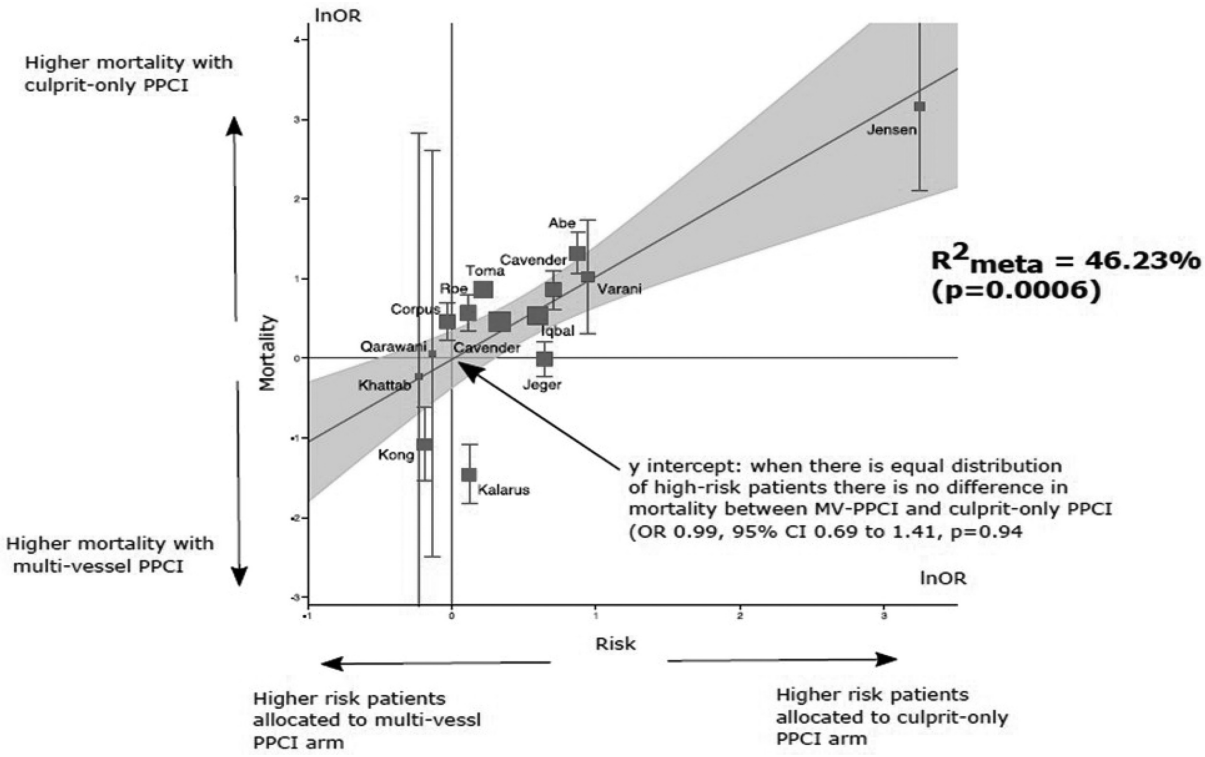

Abstract 97 Figure 1

Background Patients with ST-elevation myocardial infarction commonly have multi-vessel disease. After treating the culprit, the optimal strategy for residual disease is unknown. Large observational studies suggest deferring treatment of residual disease, but smaller randomised controlled trials (RCTs) suggest multi-vessel primary percutaneous coronary intervention (MV-PPCI) is safe. We examine if allocation bias of high-risk patients could explain conflicting results between observational studies and RCTs.

Methods A meta-analysis of registries comparing culprit-only PPCI to MV-PPCI was performed. A meta-regression was performed to determine if allocation bias of high-risk patients could explain differences in outcomes between therapies.

Results 47,717 patients (19 studies) were eligible. MV-PPCI had higher mortality than culprit-only PPCI (OR 1.59, 95% CI 1.12 to 2.24, p = 0.03). Higher risk patients were more likely to be allocated to MV-PPCI (OR 1.45, 95% CI 1.18 to 1.78, p = 0.0005). When this was accounted for, there was no difference in mortality (OR 0.99, 95% CI 0.69 to 1.41, p = 0.94).

Discussion Clinicians preferentially allocate higher-risk patients to MV-PPCI at the time of STEMI. When this is accounted for, these large observational studies in 'real world' patients support the conclusion of the smaller RCTs in the field: MV-PPCI has equivalent mortality to a culprit-only approach.

98 ASSESSMENT OF ENDOGENOUS THROMBOLYSIS PREDICTS CARDIOVASCULAR RISK IN PATIENT WITH ST-ELEVATION MYOCARDIAL INFARCTION

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Background Increasingly potent antithrombotic medications have been developed to reduce thrombosis in patients presenting with ST-elevation MI (STEMI). These reduce thrombosis but increase bleeding risk. Identification of STEMI patients at high risk of recurrent thrombosis could allow targeted treatment with potent antithrombotic medications, with less potent agents in others, to reduce bleeding. We aimed to assess the risk of thrombosis by assessing platelet reactivity, as well as the efficacy of endogenous thrombolysis, the innate ability to dissolve thrombus.

Methods In 150 patients with STEMI, global thrombotic status was assessed at baseline, immediately before primary percutaneous coronary intervention (PPCI), at hospital discharge and at 30 days. Peripheral, non-anticoagulated blood was tested using the point-of-care Global Thrombosis Test, which assesses the time to form an occlusive thrombus under high shear (occlusion time, OT), and the time to dissolve this *in vitro* formed thrombus, through endogenous thrombolysis (lysis time, LT).

Results Impaired endogenous thrombolysis (prolonged LT ≥3000s), seen in 9% of patients pre-PPCI, was significantly associated to the occurrence of major adverse cardiac events at 30 days (HR: 3.26, 95% CI: 2.32–29.19, p = 0.004), driven by cardiovascular death (HR: 3.12, 95% CI: 3.82–35.23, p < 0.001). Enhanced (rapid) endogenous thrombolysis (median LT 1040s [IQR: 940–1105]s), seen in 17% of patients pre-PPCI, was associated with spontaneous coronary reperfusion, ST-segment resolution, TIMI-2/3 flow pre-PPCI, favourable outcomes and longer baseline OT (515 ± 178 vs. 385 ± 177, p < 0.001). Pre-PPCI OT was shorter in those with recurrent myocardial infarction and stroke than those without (244 ± 130s vs. 414 ± 183s, p = 0.025). OT was prolonged at hospital discharge (500 ± 141s vs. 407 ± 184s, p < 0.001) and 30 days (577 ± 131s vs. 407 ± 184s, p <

0.001) compared to baseline, likely due to the effects of anti-platelet medication.

Conclusions In patients with STEMI, endogenous thrombolysis, when impaired, is associated with increased cardiovascular risk, and when enhanced, with spontaneous reperfusion and favourable outcomes. Identification of impaired endogenous thrombolytic status may serve as a novel biomarker to identify high-risk patients who may benefit from enhanced pharmacotherapy to reduce adverse events.

99 LEFT BUNDLE BRANCH BLOCK: IS IT TIME TO RECONSIDER THE CRITERIA FOR PRIMARY PERCUTANEOUS CORONARY INTERVENTION?

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Introduction The European Society of Cardiology includes ST-elevation and presumed new onset left bundle branch block (LBBB) as indications for immediate reperfusion therapy but LBBB may be caused by a number of alternative pathologies. Patients presenting with non ischaemic LBBB are potentially at risk of exposure to unnecessary medication and intervention ultimately leading to increased risk and needless cost. This audit sought to ascertain the proportion of patients presenting with chest pain and LBBB who were confirmed as having acute coronary syndrome (ACS) and how this compared to patients presenting with ST elevation and ST depression/T wave changes. We compared characteristics, such as age and gender and mortality data of patients with and without LBBB. We also explored characteristics that could potentially help to differentiate patients with LBBB into low and high likelihood of ACS.

Methods Data was obtained from our local MINAP database for 3103 patients who presented with chest pain over a 5 year period. Patients with LBBB were identified and demographic data including age and sex, as well as mortality rates were recorded. These factors were directly compared with patients who did not present with LBBB. Numbers of patients with LBBB and ACS were compared to patients presenting with ST elevation as well as ST depression/T wave changes on ECG. Comorbidity data was also examined to identify potential contributors to higher risk.

Results

Abstract 99 Table 1 Age, sex, diagnosis and in hospital mortality of patients presenting with either LBBB vs. ST elevation vs. ST depression/ T wave inversion

All ACS	n	% of total	Mean age	Male	Admission diagnosis ACS	Discharge diagnosis ACS	In-hospital mortality
LBBB	164	6.5	80	59%	63%	84%	14.6%
ST-elevation	1274	50.5	84	72%	89%	91%	5.8%
ST-depression/ T-wave inversion	1083	43	71	68%	72%	98%	5.4%

Abstract 99 Table 2 Age, sex, percentage of PPCI undertaken, LV dysfunction and in hospital mortality in patients presenting with LBBB vs. ST elevation

PPCI Activations	n	% of total	Mean age	Male	PPCI undertaken	Severe LV dysfunction	In-hospital mortality
LBBB	26	2.3	70	77%	58%	19%	23%
ST-elevation	1082	97.7	68	79%	92%	3.2%	4.5%
Total	1108	100	68	79%	93%	3.6%	5%

Several factors appear to be useful in stratifying LBBB patients into low and high risk of ACS including previous MI, peripheral vascular disease, cerebrovascular disease, chronic renal failure and whether the patient was a current or ex smoker.

Conclusions Patients presenting with chest pain and LBBB represent only a small proportion of the total burden of ACS. They were not older, were less likely to be male but had significantly higher mortality rates than patients with non-LBBB ECG changes. LBBB triggering Primary PCI activation is only a very small component of the total volume of cases, is a much less accurate predictor of acute coronary occlusion, but is undoubtedly a marker of greatly increased risk of in-hospital mortality and early cardiologist review of these patients in the cath lab may well be beneficial. This audit suggests that further work should be undertaken to better understand the role of LBBB of predicting ACS and acute coronary occlusion in an increasingly elderly population.

100 RE-INTRODUCTION OF PRE-HOSPITAL THROMBOLYSIS COULD IMPROVE STEMI OUTCOMES WHEN PRIMARY PERCUTANEOUS CORONARY INTERVENTION IS DELAYED

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Introduction Primary percutaneous coronary intervention (PPCI) is the treatment of choice for STEMI in the UK. Before this, thrombolysis represented the main treatment option, delivered in hospital (in-hospital thrombolysis, IHT) or prior to arrival (pre-hospital thrombolysis, PHT). Key to acceptance of the PPCI model is the timeliness of its delivery, with NICE recommending that PPCI should be delivered within 120 min of when fibrinolysis could have been given.

Methods We undertook a retrospective observational study to compare the outcome of patients with STEMI treated with either PPCI or thrombolysis (IHT or PHT) in a medium sized UK district general hospital. Data were obtained from the Myocardial Ischaemia National Audit Project (MINAP) database for patients admitted between 26/02/2002 and 11/11/2013 with a diagnosis of STEMI. Exclusion criteria were: LBBB, pre-hospital cardiac arrest, less than one year of follow up.

Patients (n = 1290) were analysed according to the reperfusion modality employed: PHT (n = 124), IHT (n = 354), PPCI (n = 664), no reperfusion therapy (n = 148). There were no significant differences in baseline characteristics of the three intervention groups (Table 1).