

Poster presentation

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Assessment of myocardial infarct size and left ventricular function following acute myocardial infarction by cardiovascular magnetic resonance: A comparison of treatment with thrombolysis versus primary percutaneous coronary intervention

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Introduction

Primary percutaneous coronary intervention (PPCI) is considered the optimum reperfusion strategy in the treatment of acute myocardial infarction (AMI). However, there remains some debate surrounding the benefits of PPCI over the early administration of thrombolytic therapy. In the UK, so called "door to needle" times for thrombolysis are generally less than 30 minutes and therefore, may decrease the reported benefits of delayed PPCI.

Purpose

The purpose of this study was to compare infarct size and left ventricular ejection fraction (LVEF) as determined by cardiovascular magnetic resonance (CMR) in two cohorts of AMI patients; a retrospective group treated by thrombolysis and a prospective group treated with PPCI.

Methods

44 patients with first presentation acute ST elevation MI, treated successfully with PPCI, underwent CMR imaging within 72 hours of admission. The "pain to reperfusion", "call to reperfusion" and "door to reperfusion" times were recorded for all patients. The data from this cohort were compared to retrospective data collected on a cohort of patients who were treated in the same institution 4 years earlier when thrombolysis was the preferred reperfusion strategy. The patients in the retrospective comparison group were matched for age, sex and territory of infar-

tion. A similar CMR protocol was used in both groups and included cine imaging and late gadolinium enhancement.

Results

The "door to reperfusion" times were significantly shorter for the thrombolysis group (mean time (minutes) (SD) 28.5 (18.1) vs 76.4 (34.3), $p < 0.001$) as were the "call to reperfusion" times (71.7 (20.1) vs 124.9 (40.7), $p < 0.001$). Although the "pain to reperfusion" times were also shorter in the thrombolysis group (214.9 (200.8) vs 227.2 (121), $p = 0.73$) the difference was not significant. Patients treated with PPCI had greater %LV scar (23.7 (13.3) vs 19.6 (13.5), $p = 0.16$) and lower LVEF % (43.9 (8.6) vs 46.6 (7.1), $P = 0.12$) than patients treated with thrombolysis but these differences were not significant. There were no significant differences in LV volumes or presence or extent of microvascular obstruction.

Conclusion

In this single centre comparison, we found no significant differences in infarct size or LVEF as determined by CMR, in patients presenting with AMI and treated with thrombolysis or PPCI within four hours of symptom onset.