

029

PREDICTORS OF SURVIVAL AND NEUROLOGICAL RECOVERY IN ST-ELEVATION MYOCARDIAL INFARCTION COMPLICATED BY OUT OF HOSPITAL CARDIAC ARREST

F A Choudry, R P Weerackody, A Wragg, A Mathur, P G Mills, A K Jain *London Chest Hospital*

doi:10.1136/heartjnl-2013-304019.29

Background Recent UK epidemiological data suggests that while incidence and mortality of myocardial infarction (MI) is in decline, mortality associated with out of hospital cardiac arrest (OOHCA) in the setting of MI is still a significant problem now constituting 70% of its total fatality. Small studies have shown survival benefit with primary percutaneous coronary intervention (pPCI) in OOHCA in the setting of ST elevation myocardial infarction (STEMI). There is little contemporary outcome data in this population. We sought to identify predictors of survival in STEMI complicated by OOHCA in a large, contemporary cohort in the era of pPCI.

Methods Between January 2008 and October 2011, 1836 consecutive STEMI admissions to a high volume pPCI centre were retrospectively analysed. 132 patients were identified as having OOHCA. Clinical and procedural data was collected from the UK Myocardial Ischaemia National Audit Project (MINAP) database and patient notes. Endpoints were all cause mortality to 4 years (mean: 559 days, median: 380 days) and neurological recovery at discharge (Cerebral Performance Score/CPS 1). Mortality data was collected using the Office of National Statistics mortality database.

Results 132 out of 1836 consecutive STEMI patients were identified with OOHCA (7.2%). The mean age of patients was 59.4 ± 14 years, 78.8% were male and 55% were directly conveyed to the pPCI centre; the remaining were transferred from district hospitals. Survival to discharge was 76.5% (101/132 patients). 86 patients had full neurological recovery (65% of the whole cohort). Long term follow-up revealed only one further death making the overall survival rate 75.8%. Survivors had significantly higher incidence of witnessed arrest ($p < 0.0001$) and immediate cardiopulmonary resuscitation (CPR)/advanced life support (ALS) ($p < 0.0001$), a shorter time to return of spontaneous circulation (ROSC) ($p < 0.0001$) and were more likely to be alert post ROSC ($p < 0.0001$). Shorter call to balloon time ($p = 0.0117$) and time from arrest to arrival at pPCI centre ($p < 0.0001$) were strongly associated with improved survival as was successful pPCI ($p = 0.0004$) defined as TIMI 2–3 flow. Patient factors associated with poor outcome included three-vessel disease ($p = 0.0007$), severe left ventricular impairment ($p = 0.0179$), cardiogenic shock ($p = 0.0023$) and renal dysfunction ($p < 0.0001$) on admission. Improved neurological outcome in survivors was strongly associated with witnessed arrest ($p < 0.0001$), immediate CPR/ALS ($p = 0.0186$), shorter time to ROSC ($p < 0.0001$), patient being alert post ROSC ($p < 0.0001$) and shorter call to balloon ($p = 0.0028$) and arrest to arrival times ($p < 0.0001$).

Conclusions To our knowledge, this is the first reported series of STEMI complicated by OOHCA of this size in UK contemporary practice. This data shows a 76% survival rate, 65% rate of full neurological recovery and supports the emergent transfer of this patient group to a cardiac centre for pPCI.