(CrCl) was calculated using Cockcroft-Gault formula. Patients were subgrouped into 5 grades based on preoperative CrCl; Group I CrCl≥90 ml/min; II 60–89; III 30–59; IV 15–29; V <15 or haemodialysis. Late Kaplan–Meier survival data (compared by log rank method), censored at 1/10/2009 were obtained from the UK CCAD. Surgical morbidity outcomes included re-exploration for bleeding, stroke (type 1 deficit) and low cardiac output state (LCOS) requiring inotropes ± intra-aortic balloon counterpulsation were compared using Fisher's Exact tests.

Results 1215 patients (921 males) with a mean age of 64 years (31–89 years) underwent CABG; 742 on OH and 472 on IN. Preoperative renal status in the groups were Group I -209(17%), II-584 (48%), III-387(32%), IV-26(2%) and V (8(1%). Similar percentages in each group had ≥1 grade deterioration of renal function postoperatively 19%, 18%, 16% and 23% (grades I–IV respectively; p=0.470). When examined as a continuous variable, higher preoperative CrCl correlated with a better postoperative improvement in CrCl (r=0.073, p=0.012 Spearman Rank). Overall 30-day mortality was 3.33% (CI 2.32 to 4.34%) and was not different by group I-3.37% (CI 0.92 to 5.82), II-2.09% (CI 0.92 to 3.26%), III 4.92% (CI 2.76 to 7.08%), IV 8% (CI 0 to 18.6%) and Stage V 0% (CI 0 to 0.4%; p=0.101) or by therapy type; (p=0.411). IN patients had similar preoperative renal function (median CrCl 66.8 vs 68.6; p=0.828) but a higher rate of postoperative renal deterioration (53.3 vs 46.7%, p<0.001). Stroke (p=1.000), bleeding (p=0.755) and LCOS (p=0.335) incidence were not different between therapy type. Overall mean survival was 9 years (CI 8.7 to 9.2 years) and was not different by renal function grade (p=0.612). However, IN patients had shorter mean survival 8.7 (8.3 to 9.0) vs OH 9.1(8.8 to 9.4) years; p=0.03.

Conclusions In T2DM-CABG, 36% of patients have CrCl <60 ml/min. Higher CrCl protects against postoperative renal deterioration. Renal dysfunction does not appear to affect hospital outcome or survival. However, preoperative IN requirement increases the risk of renal dysfunction and is associated with worse longer-term survival.

58 TEMPORAL EVALUATION OF REFERRAL FOR AND LONG-TERM SURVIVAL FROM CARDIAC REHABILITATION FOR ACUTE MYOCARDIAL INFARCTION

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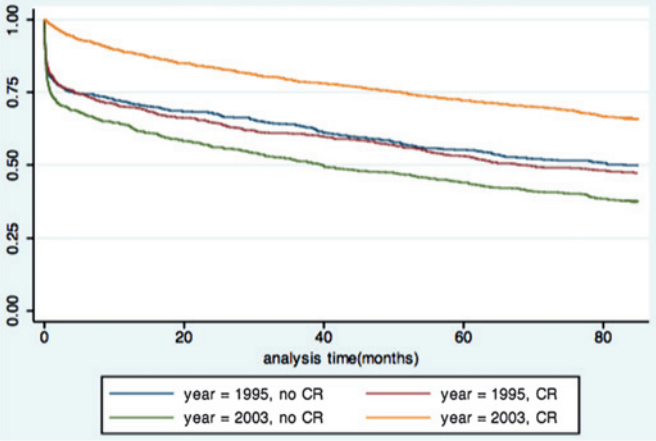
[1]C L Lewinter, [1]M B Bland, [2]P D Doherty, [1]B L Lewin, [3]A S H Hall, [4]C P G Gale. *[1]University of York, York, UK; [2]York St John University, York, UK; [3]Yorkshire Heart Centre, Leeds, UK; [4]University of Leeds, Leeds, UK*

Background Cardiac rehabilitation (CR) is a cost-effective, evidence-based approach to managing heart disease. Rates of uptake have and continue to vary despite recommendations from the NSF for CHD and NICE. The Evaluation of the Management and Methods of Acute Coronary Events (EMMACE) 1 and 2 studies are 2 large prospective multi-centre registries of care of acute coronary syndromes (ACS) in Yorkshire undertaken in 1995 and 2003 in respectively. We studied the temporal changes in referral for and long-term survival from CR in patients who were admitted to hospital with an acute myocardial infarction (AMI).

Methods Baseline characteristics were described as numbers (%) or as means with IQRs. For Continuous variables, the Kruskal Wallis test was used for comparisons. Discrete variables were assessed by the χ^2 test. Unadjusted relative risk ratios (RRR) were calculated to assess mortality after referral for CR. Kaplan–Meier (KM) curves compared unadjusted survival stratified by CR referral and EMMACE study. Log rank tests compared the survival estimates. Sex, age, STEMI, heart failure, diabetes, COPD and mini-GRACE score, revascularisation, reperfusion, ACE-inhibitors, α-blockers, statins, anti-platelet agents and admitting cardiologist were regressed (backward logistic, p<0.10 and goodness of fit with a group of 10) on CR referral and represented as 95% CI OR. A Cox proportional model (Model 1: mini-GRACE score, Model 2: sex, age, STEMI, heart failure, diabetes, COPD, EMMACE risk score, revascularisation, reperfusion, ACE-inhibitor, α-blocker, statins, anti-platelet agent, admitting cardiologist) was used to compare the temporal long-term survival estimates (all cause mortality) by CR referral.

Results 4341 had AMI. CR referral was 44% in 1995 and 59 % in 2003 (p<0.001). CR referral was associated with reduced mortality in 2003 (RRR, 95%CI: 0.54; 0.50 to 0.60), but was not in 1995 (1.02; 0.96 to 1.09). Unadjusted survival for patients not referral for CR in 1995 was similar to that for patients referred for CR in 1995; (Abstract 58 figure.1). For those referred for CR, the mean mini-GRACE score for CR referrals was lower in 2003 than 1995; 0.53 and 0.72, p<0.001. After adjustment using the min-GRACE score (Model 1), the impact (HR, 95% CI) of CR referral was 0.63, 0.55 to 0.73 in 2003 and 1.07, 0.92 to 1.3 in 1995. After adjustment using Model 2, the impact (HR, 95% CI) of CR referral was 0.57, 0.48 to 0.66 in 2003 and 1.31, 1.04 to 1.60 in 1995.

Conclusion Between 1995 and 2003, referral for CR increased and became a significantly important factor contributing to reduced mortality rates post-AMI. This is despite the differences in patient and treatment factors between the 2 studies periods. Even so, rate of referral for CR remain sub-optimal.



Abstract 58 Figure 1 Kaplan–Meier survival estimates.

59 SHORT TERM ELEVATION OF CHOLESTEROL LEVEL IN NEONATAL LIFE AND LONG TERM CHANGES IN AORTIC STIFFNESS: INSIGHTS FROM USE OF INTRAVENOUS LIPIDS

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[1]A J Lewandowski, [1]M Lazdam, [1]E Davis, [1]R Poole, [1]J Diesch, [1]J Francis, [1]S Neubauer, [2]A Lucas, [2]A Singhal, [1]B Kelly, [1]P Leeson. *[1]Cardiovascular Medicine, University of Oxford, Oxford, UK; [2]Institute of Child Health, University College London, London, UK*

Introduction Offspring born to hypercholesterolaemic mothers have increased fatty streak formation in the fetal aorta, which persists into adolescence. To understand whether exposure to elevated cholesterol in early life, independent of a maternal history of hypercholesterolaemia, also has a long-term impact on the cardiovascular system we studied the vascular phenotype of adults in whom cholesterol levels were artificially elevated for a short period postnatally.

Methods We prospectively followed-up 102 subjects born premature now aged 23 to 28 years. Individuals exposed to maternal hypercholesterolaemia were excluded. 18 received intravenous (IV) lipids during the first nine weeks of life and were matched 2:1 for pregnancy and early life complications, age, sex, birthweight and gestational age with controls that did not receive IV lipids. Aortic pulse wave velocity (aPWV), regional aortic distensibility, left ventricular mass and ejection fraction were determined by cardiovascular