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## FREE ORAL SESSIONS

### Oral Session I – Risk Factors & Outcome

#### O-01

##### Health, survival and quality of life after coronary artery bypass grafting: a ten year follow-up study

Bridie O'Neill<sup>2</sup>, Fiona Taylor<sup>1</sup>, Akbar Vohra<sup>1</sup>

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**Introduction.** The study objective was to determine the effect of coronary artery bypass grafting (CABG) on survival and long term quality of life.

**Method.** Perioperative questionnaire data were collected from eighty patients (mean age 62.4 years; 67 male, 13 female) who underwent on-pump CABG between September 1999 and June 2000. Information was gathered on mortality, disease specific symptoms (chest pain (CCS), breathlessness (NYHA), myocardial infarctions, heart failure), patient satisfaction, health related quality of life (shortform-12), functional status (Barthel's Score, Duke Activity Score, working hours) and neurocognitive function (mini mental score, strokes). Follow-up data were obtained via telephone interview at set intervals from 6 weeks to 10 years postoperatively. Analysis was basic descriptive, Mann-Whitney U, Pearson's correlation and Wilcoxon matched pairs tests using SPSS 16.

**Results.** Survival at 5 years was 91.3% and 70% at ten years. Cardiac health was improved following CABG with just 5 patients having an MI in the following 10 years. There was a significant and sustained reduction in both the prevalence of angina (97.5% pre-CABG versus 14% of survivors at ten years ( $p < 0.001$ )) and also severity (reduction in mean CCS scores from 2.46 pre-CABG to  $< 1$  postoperatively ( $p < 0.001$ )). Although cardiac mortality was the single most common cause it accounted for just 7/19 known causes of death. At 10 years, 17.5% of patients had had a stroke, causing 4 deaths. Other causes of death by 10 years were: cancer (5), respiratory (2) and old age (1); cause is unknown for 5 patients. Patients experienced an improved functional status ( $p < 0.05$ ) and cognitive function returned to normal within a year in all patients. SF-12 scores improved following CABG to become comparable with an age matched UK population (pre-CABG scores were significantly lower than the population ( $p < 0.001$ )). Patients who restarted smoking did not show a sustained improvement in functional status or SF-12 score and had a more variable MMSS compared with non-smokers.

**Conclusion.** Survival and quality of life are improved by coronary artery bypass grafting but not in patients who restart smoking.

#### O-02

##### Clinical outcome after pre-incision assessment of aortic atherosclerosis by A-View echocardiography in 5,886 elective cardiac surgery patients

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**Introduction.** Cardiac surgery is frequently complicated by neurological events due to migration of emboli after manipulation of the ascending aorta (AA). Timely visualization of athero-

sclerosis of the AA enables the surgeon to consider changes of the surgical plan. Transoesophageal echocardiography (TOE) is a widely used imaging method permitting evaluation of the aorta preoperatively, but assessment of the distal AA is hampered by interposition of the air-filled trachea between oesophagus and AA. The A-View® (Aortic-view) method, a modification of conventional TOE using a fluid-filled balloon, overcomes this limitation. The safety and diagnostic accuracy of the A-View® have successfully been shown in previous studies.

**Method.** During the period 2006-2010, 5,886 patients underwent elective cardiac surgery, 714 with additional A-View® monitoring. Clinical data, including long term follow up to 1 year, were prospectively registered in the local database. Main outcome was focused on mortality and major adverse cerebral events in hospital.

**Results.** The patients not screened with the A-View® technique had a lower neurological risk profile compared with the A-View group (age 66.5 yr vs. 72.0  $< 0.001$ ; hypertension 48.7% vs. 59.2  $< 0.001$ ; vascular disease 9.9% vs. 16.1  $< 0.001$ ; prior CVA 7.8% vs. 17.6  $< 0.001$ ; myocardial infarction 9.1% vs. 13.5  $< 0.001$ ; LVEF  $< 30\%$  5.9 vs. 8.4  $< 0.001$ ; EuroSCORE 5 vs. 7.1). In patients without a postoperative CVA, predicted mortality in the non A-View group was 3.6%; observed mortality was 1.1%. Predicted and observed mortality in the A-View group was 9% and 0.9% respectively. In the patients with a postoperative CVA, predicted mortality in the non A-View group was 10%; observed mortality was 16%. Predicted and observed mortality in the A-View group were 15% and 13% respectively.

**Discussion.** These observational data show that risk stratification by visualization of the diseased aorta prior to surgery, allows the surgical team to modify the surgical approach, resulting in a strong reduction of expected neurological events and related mortality.

#### O-03

##### Comparison of two different glycaemia protocols for coronary artery surgery on postoperative cognitive dysfunction

Pinar Kurnaz, Zerrin Sungur Ulke, Emre Camci, Gunseli Orhun, Mert Senturk, Nuket Sivrikoz, Emin Tireli, Omer Sayin, Hakan Gurvit

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**Introduction.** Postoperative cognitive dysfunction is a well known phenomenon after cardiac surgery [1]. Tight glycaemic control has been shown to improve survival and to reduce morbidity in coronary surgery [2]. The effects of glycaemia on neurological outcome are quite limited except for focal neurological injury of this surgical population. The aim of this study was to compare two different glycaemia protocols, tight or liberal, on postoperative cognitive function.

**Method.** After approval of the Ethic Committee, thirty patients for elective coronary surgery were included in the study. During the intraoperative period and first 24 hr, the first group (G1) ( $n=15$ ) was under tight glucose control ( $< 6.6$  mmol/L) and the second one (G2) ( $n=15$ ) was under liberal glycaemia control ( $< 9.9$  mmol/L). Induction and maintenance of anaesthesia were identical for the two groups. Neurocognitive function which was evaluated via a psychometric test battery, was assessed at least two days before surgery (T0), as well as at the first postoperative week (T1) and at the third month (T2). Data were compared with Student's  $t$  test and repeated measures of ANOVA.

**Results.** Demographic and operative data (bypass or cross-clamp time, lowest temperature, number of coronary anastomoses, etc) were comparable between groups. No major adverse neurological outcome (stroke, change in mental status, visual loss etc) has occurred. All subjects had a trend of lower neurocognitive scores at T1 than at T0; without statistical significance. Patients of the first group had significantly better scores than GII for mini mental state examination, modified word recall test, concept shifting test, and number range test at both T1 and T2 ( $P < 0.05$ ).

**Conclusion.** Postoperative cognitive dysfunction is commonly seen after cardiac surgery. According to the preliminary results of this study, tight glucose control seems to be associated with preserved cognitive function after coronary surgery.

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**O-04**

**Creatinine is not, but estimated GFR is, a useful predictor of the need for postoperative haemofiltration after adult cardiac surgery**

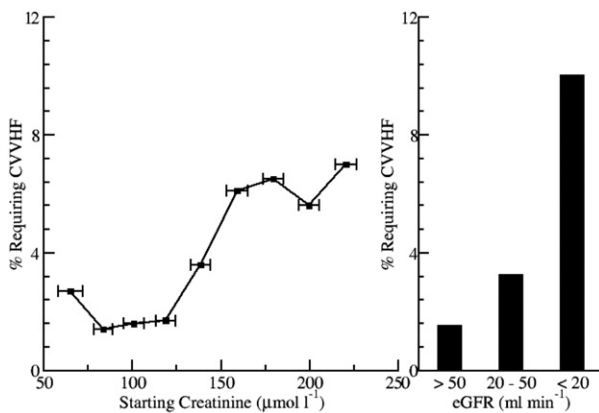
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**Introduction.** Major renal dysfunction is a recognized complication after cardiac surgery. Traditional risk scoring models, such as EuroSCORE, use creatinine as a surrogate marker for renal function. Low levels of creatinine may reflect sarcopaenia rather than normal renal function.

**Method.** We retrospectively analysed the need for new postoperative haemofiltration (CVVHF) in a cohort of 14,800 adult patients operated in a single centre. Estimated GFR (eGFR) was estimated by the Cockcroft and Gault method and normalized to a body surface area of 1.73 m<sup>2</sup>. Data were analysed using SPSS. Results are displayed as Mean  $\pm$  SD.

**Results.** Starting creatinine produced a hockey-stick shaped graph for the need for new CVVHF whereas eGFR showed a progressive increase with decreasing renal function.



**Discussion.** Postoperative renal failure requiring renal replacement therapy is a recognized risk of cardiac surgery and is associated with a significant increase in perioperative mortality [1]. Risk scoring systems incorporate baseline creatinine as a predictive marker. With an aging population low creatinine may not reflect low risk and may conceal an increased true risk which is revealed when eGFR is used.

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**O-05**

**Low BMI is a risk factor for postoperative renal failure after cardiac surgery**

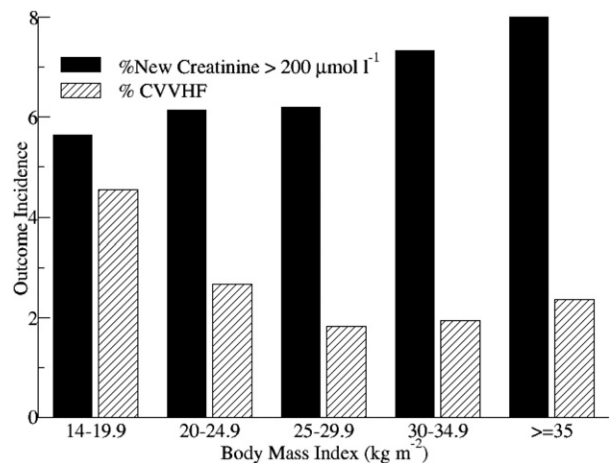
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**Introduction.** Major renal dysfunction is a recognized complication after cardiac surgery that dramatically increases mortality [1]. Increased Body Mass Index (BMI) is associated with an increase in perioperative morbidity. We hypothesized these may be linked

**Method.** We retrospectively analysed outcome data from 14,800 adult cardiac surgical patients operated in a single centre. Data was analysed using SPSS.

**Results.** There was no statistically significant relationship between BMI and creatinine rise ( $P = 0.10$ ). However there was a highly significant difference between different BMI groups and the need for new haemofiltration (CVVHF) ( $P < 0.0003$ ).



**Discussion.** Low BMI appears to carry a marked increase in the risk for needing postoperative renal replacement. Reasons for raised CVVHF rates in this group may be multiple. Creatinine alone is a poor indicator of degree of renal injury, especially in those patients with low BMI.