electromechanical interval, predict postoperative atrial fibrillation in elective coronary artery bypass patients.

Methods: A prospective study evaluated preoperative clinical and echocardiographic data in 192 patients who underwent elective coronary artery bypass from 2010 to 2012.

Results: 18 (9.37%) patients developed postoperative atrial fibrillation. Compared to patients without postoperative atrial fibrillation, these 18 had significantly longer intensive care unit and hospital stays, they were significantly older (58.62 ± 10.02 vs. 53.22 ± 8.23 years; $p < 0.02$), with a larger left atrial volume (83.39 ± 8.31 vs. 55.47 ± 8.37 cm^3, $p < 0.001$), longer atrial electromechanical interval (133.67 ± 8.15 vs. 98.05 ± 6.71 ms $p < 0.0001$), and lower tissue Doppler imaging systolic velocity wave amplitude (6.6 ± 1 vs. 9.4 ± 2.2 cm s^{-1}; $p < 0.001$); they also had a higher prevalence of hypertension (61.11% vs. 38.5%; $p < 0.04$). Using 115 ms as the cutoff value of atrial electromechanical interval enabled us to detect patients who developed postoperative atrial fibrillation with 100% sensitivity, 77% specificity, 78% positive predictive value, and 100% negative predictive value.

Conclusion: Older hypertensive patients are at higher risk of developing postoperative atrial fibrillation. Preoperative measurement of atrial electromechanical interval by tissue Doppler echocardiography is a useful predictor of postoperative atrial fibrillation in coronary artery bypass patients.

68. Bilateral internal mammary artery in coronary artery bypass grafting and the risk of sternal wound infection in diabetic patients

Salah Eldien Altarabsheh, Salil Deo, Hamoud Obied, Yagzan Obeidat, Lyle Joyce, Soon J Park

Background: Coronary artery bypass grafting is superior to percutaneous interventions in diabetic patients with multi-vessel coronary disease. The use of bilateral internal mammary arteries may lead to better long-term survival, but the risk of postoperative deep sternal wound infection has limited its use in diabetic patients. However, studies have reported conflicting results.

Methods: MEDLINE, EMBASE, World of Science, and the Cochrane library were searched for studies comparing the incidence of deep sternal wound infection in diabetic patients undergoing either (LITA) or BITA harvest. We used random effect models to compare risk ratios within groups.

Results: One randomized controlled trial and 10 observational studies (126,235 diabetic patients: 122,465 LITA, 3770 BITA) met inclusion criteria. Deep sternal wound infection occurred in 3.1% and 1.6% for the BITA and LITA cohorts, respectively. The risk ratio for deep sternal wound infection development was 1.71 (1.37–2.14) for BITA compared with LITA. Patients who underwent

skeletonized BITA harvest had a similar risk of deep sternal wound infection compared with LITA (0.9 [0.42–2.09]), although pedicled harvest demonstrated increased risk (1.77 [1.4–2.23]). Early mortality was comparable in the LITA cohort (2.5%) and the BITA cohort (2.3%; $p = 0.8$).

Conclusions: The risk of sternal wound infection can be minimized in diabetic patients undergoing CABG by performing ITA harvested in a skeletonized manner with meticulous attention to preserving sternal blood flow. Pedicled harvest is to be discouraged when utilizing both ITA owing to a significant increase in the risk of sternal wound infection.

69. Does pulmonary hypertension affect outcome after mitral valve surgery

Nedim   Selimovic (Reem Alameer), Ahmed Abdulshakour, Mohammad Ayaz

Background: Pulmonary hypertension (PH) due to left heart disease (LHD) is the most common form of pulmonary hypertension. We know from previous studies that PH in patients with LHD is associated with poor prognosis. Regarding incidence and prevalence of PH associated with mitral valve disease we have different data depending of study population. The purpose of this study was to evaluate effects of pulmonary hypertension on short and long term survival following mitral valve surgery at KFSH&RC.

Methods: Retrospective study of all patients who have undergone mitral valve (MV) surgery since January 2010 until December 2011 with follow up to December 2013. Pulmonary artery pressure was assessed by Doppler echocardiography pre- and postoperatively. The impact of pulmonary hypertension (PASp $\geqslant$ 50 mm Hg) on early (30 days) and late outcomes and duration of hospital stay was analyzed.

Results: During the period of 2 years 233 patients (63% female) with mean age 45 ± 14 (range 19–83 years) underwent MV surgery. Mean follow up was 2.8 ± 0.97 years. Main indication for MV surgery was rheumatic valve disease (83%). Isolated MV surgery has been performed in 130 patients and combine valve surgery in 103 patients. Mortality was significantly higher after combine valve surgery ($p = 0.028$). Primary valve surgery has been done in 162 cases and re-do surgery in 71 cases. Interesting, there were no difference in survival between these two groups ($p = 0.88$). There were no significant difference in survival after MV replacement ($n = 195$) and MV repair ($n = 38$; $p = 0.18$). Pulmonary hypertension was present in 115 (51%) patients. Duration of hospitalization stay after valve surgery was almost twofold longer in patients with PH (24 ± 48 vs.13 ± 14 days, $p = 0.02$). Patients died within 30 days had a significantly higher PASp (64 ± 30 vs. 48 ± 17 mmHg; $p = 0.003$). We found a clear tendency

to higher mortality in patients with pulmonary hypertension.

Conclusions: Pulmonary hypertension clearly affects early and late survival after MV surgery. Better survival and shorter duration of hospital stay in patients without PH supports early admission for MV surgery before occurrence of PH.

70. Surgical mitral valve replacement with modified Melody valve in children

Ahmed Badr Elwy, N. Albahlooli, H. Hamid, Y. Al Fariedi, K. AlKhalaf, A. Al Sahari, A. Al Otay, K. Al Najashi, R.M. Di Donato

Objective: We describe a case of mitral valve (MV) replacement using modified Melody valve implantation.
Methods: A 2.5 year-old girl,with a history of ALCAPA repair in April 2012, had undergone MV repair by ring annuloplasty at 1 year of age. She came back with severe MV stenosis (mean gradient, 8 mmHg) and regurgitation. She had a hugely dilated left atrium and a MV annulus of 14 mm. She, then, underwent surgical MV replacement with a modified Melody valve.
Results: The Melody valve was prepared before the cardiopulmonary bypass. The procedure included stent shortening and adding a bovine pericardial sewing ring. Through a trans-septal approach, the previous MV ring was removed, the pericardial ring patch of the Melody valve was secured to the mitral annulus and the ventricular end of the valve was fixed to the posterior–inferior wall of the left ventricle. The prosthesis was then inflated to size 16 mm. Testing of the valve showed good leaflet coaptation. The atrial septum was closed by fenestrated (4 mm) bovine pericardial patch. TEE showed good valve function with a tiny paravalvular leak and no left ventricular outflow obstruction. The pulmonary veins were also unobstructed.
Conclusions: The modified Melody valve is a viable option for children MV annular diameters, providing a valid alternative to existing prostheses. The technique is relatively easy and the short term result is very good. This prosthesis will be particularly attractive if maintaining competence after subsequent dilations as the child grows.

71. Incidence of paravalvular leakage after aortic and mitral valve replacement at KFSH & RS, single centre experience

Nedim Selimovic (Faisal Harthy), Abd-Alkareem Al-Allaf, Vaqas Ahmed

Background: Paravalvular leakage (PVL) is not rare and can be a serious clinical problem in 1–5% of all valve replacement. There are inconclusive data regarding the incidence of PVR after aortic valve replacement (AVR) and mitral valve replacement (MVR).The aim of this study was to review PVL based upon more than ten years experience from King Faisal Specialist Hospital & Research Centre.
Method: Retrospective analysis of the consecutive adult patients that underwent surgical valve replacement between January 2000 and December 2011.
Results: During the period of 12 years (January 2000 through December 2011), prosthetic valve replacement surgery was performed in 2060 patients, aortic valve replacement (AVR) in 655, mitral valve replacement (MVR) in 1048 and combined AVR and MVR in 357 patients. From echocardiography database we found significantly higher incidence of PVL after combine AVR + MVR ($n = 48$; 13.45% than isolated MVR ($n = 46$; 4.38%) and AVR ($n = 29$; 4.43%).

Mechanical valve was implanted in 82 cases and bioprosthesis in 41 cases. Initial VR was performed in 55% of patients ($n = 68$). First re-do has been done in 32 patients (26%), second-, third- and forth reoperation were performed in 11 (8.9%), 9 (7.3%) and 3 (2.4%) patients, respectively. Mild to moderate PVL was diagnosed in 90 cases (73%) and 33 (27%) patients had moderate to severe PVR according TTE. It was significantly higher percentage of moderate and severe PVR after MVR than AVR ($p = 0.025$). There was significantly higher incidence of reoperation in mitral then aortic position ($p = 0.037$).
Conclusion: Paravalvular leakage after mitral valve replacement is severe and has a more detrimental clinical outcome compared to that after aortic valve replacement. Incidence of PVL is significantly higher after combine valve replacement than single valve replacement.

72. Value of postoperative hyperglycemia for outcome of coronary artery bypass grafting surgery

Mohamed Abdulwahab Alassal

Objectives: To determine the frequency of postoperative (PO) hyperglycemia in non-diabetic patients underwent Coronary artery bypass grafting (CABG) surgery and to evaluate its predictability for the outcome of these patients.
Patients & Methods: The study included all patients assigned for CABG surgery and had no previous history of diabetes mellitus with preoperative fasting blood glucose of <110 mg/dl. Hyperglycemia was diagnosed if random blood glucose (RBG) levels are >180 mg/dl. Patients were categorized according RBG into: Normoglycemics had RBG <180 mg/dl and Hyperglycemics had RBG <180 mg/dl. Intraoperative data included frequency of CABG with beating heart and number of internal mammary artery graft used, aortic artery clamping, CPB and