Influence of Coronary Artery Bypass Grafting on the Outcome of Aortic Valve Replacement in the Presence of Left Ventricular Dysfunction: The VERDI (Valve Replacement With Left Ventricular Dysfunction Italian) Surgical Study

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Background: The impact of coronary artery bypass grafting (CABG) on the outcomes of aortic valve replacement (AVR) in the presence of left ventricular (LV) dysfunction is still poorly defined. This retrospective multiinstitutional study evaluated the long-term results of AVR with or without combined CABG in patients affected by impaired LV contractility.

Methods: From January 1996 to December 2000, 267 patients with LV impairment (LVEF <40%) had undergone AVR because of aortic stenosis at 4 different institutions. Fifty-nine patients (Group A) had been admitted to associated CABG, whereas 198 patients (Group B) had had isolated AVR. Both groups were followed-up in terms of postoperative morbidity and mortality. Kaplan-Meier estimate and logistic regression multivariate analysis were performed to elucidate postoperative results and describe predictors of unfavourable late outcome, including patient/prosthesis mismatch (prosthesis size/body surface area).

Results: Preoperative patient profile did not differ between the two groups, except for patient age (71±7 in Group A, and 68±11 in Group B -p<0.05-, respectively). Follow-up was 100% complete. No significant difference was found between the two groups in terms of late morbidity and mortality, although a trend (p=0.06) towards a worse survival was observed in patients admitted to AVR+CABG (75% ± 5 years and 50% ± 5 years in Group A, and 85% and 65% in Group B, respectively). Satisfactory recovery of long-term functional capacity was achieved in both groups. Patient/prosthesis mismatch was not a determinant of unfavourable outcome, whereas older age (p<0.001, hazard ratio:4.08, C.I.: 2.05-8.13) represented the only negative predictor in both groups.

Conclusions: CABG procedure does not appear to significantly influence postoperative results of AVR in the presence of LV dysfunction. However, elderly patients are at higher risk of unfavourable late outcome whereas patient/prosthesis mismatch does not appear influence patient survival or recovery of patient functional capacity in this setting.

5:15 p.m.

Initiation of Anticoagulation after Cardiac Surgery: A Prospective Cohort Study of Safe and Cost-Effective Use of Low Molecular Weight Heparin Bridging in Lieu of Continuous Intravenous Unfractionated Heparin

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Initiation of anticoagulation after cardiac surgery often delays discharge and prolongs hospital stay. This problem is especially common after prosthetic heart valve surgery and coronary artery bypass grafting (CABG) complicated by postoperative atrial fibrillation. Traditionally, intravenous unfractionated heparin and warfarin are initiated concomitantly, and continuous intravenous heparin is discontinued after a therapeutic International Normalized Ratio (INR) with warfarin is achieved. Our Cardiac Center's Anticoagulation Service tested an alternative strategy: administration of subcutaneous low molecular weight heparin (LMWH) instead of intravenous unfractionated heparin as a "bridge" to oral anticoagulation. We continued LMWH on an outpatient basis until a therapeutic INR was achieved. In a prospective cohort study, we enrolled 55 postoperative cardiac surgery patients who met the inclusion criteria. Both patient and prosthesis characteristics including history of previous anticoagulation, postoperative complications, and postoperative use of warfarin were documented. The primary outcome was inpatient and outpatient length of stay. However, randomized controlled trials are required to compare the efficacy and safety of "bridging" versus conventional anticoagulation.

A Proper Range of the International Normalized Ratio for Left Atrial Thrombi Resolution Among Candidates for Percutaneous Transmitral Mitral Commissurotomy Under Oral Anticoagulant Therapy

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Background: Resolution of left atrial thrombus (LAT) is a critical factor in determining the outcome of percutaneous mitral commissurotomy (PTMC). Although the optimal range of the INR is generally accepted as 2.0-3.0, the nature of this optimal range is not well defined. This study aimed to assess the potential range of the INR during PTMC and to determine the optimal range using prospective data from a single center.

Methods: From August 1996 to December 2000, all PTMC candidates with I_AT were given warfarin and were treated with oral anticoagulation. The patients were divided into two groups: Group A (median INR range 2.6-3.3, INR >3.5 in 10.9%, INR <2.5 in 6.3%) and Group B (median INR range 2.0-2.5, INR >3.5 in 9.9%, INR <2.5 in 3.2%). The INR was monitored at each outpatient visit and was adjusted using the home International Normalized Ratio (INR). The patients were followed for 6-48 months (mean 20.5 ± 6.2). Of 1791 patient-months studied, 85 patients (4.7/100 patient-months) demonstrated resolution of I AT. Of 606 INR samples, the mean of the median INR was 3.0 ± 0.2 (range 2.3 to 3.5) in the LAT-resolution group (333 INR samples, 86.2% exceeded 2.5) and 2.2 ± 0.1 (range 1.7 to 2.5) in the LAT-persisting group (273 INR samples, 10.9% exceeded 2.5). The INR almost completely predicted successful LAT resolution among candidates for PTMC under OA, with low bleeding complications. Cox proportional hazard model was used to determine the effect of INR adjusted for other potential confounders. Receiver Operating Characteristics (ROC) curve was applied to identify an optimal INR cut-off point.

Results: The optimal range of the INR was 2.5 ± 0.3 for successful LAT resolution among candidates for PTMC under OA, with low bleeding complications.