5:00 p.m.

837-5 **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**

Roberto Lorusso, Cesare Beghi, Luca Ballore, Piersilvio Gerometta, Claudio Russo, Vincenzo Cianci, Andrea Garatti, Elena Ribera, Tiziano Gherli, Vincenzo Arena, Ettore Vitali, Salvatore Casari, Gaetano Minzioni, *Cardiac Surgery Unit - Ospedale Civile, Brescia, Italy, Cardiac Surgery Units, Parma, Bergamo, Milan, Italy.*

Background: The impact of coronary artery bypass grafting (CABG) on the results 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 1990 to December 2000, 257 patients with LV impairment (LVEF <40%) had undergone AVR because of aortic stenosis at 4 different Institutions. Fifty-nine patients (Group A) had been submitted 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 disclose 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 shown in patients submitted to AVR+CABG (75% at 5 years and 50% at 8 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 apparently influence patient survival or recovery of patient functional capacity in this setting.

5:15 p.m.

837-6 **Initiation of Anticoagulation After Cardiac Surgery: A Prospective Cohort Study of Efficacy, Safety, and Cost With Low Molecular Weight Heparin Bridging in Lieu of Continuous Intravenous Unfractionated Heparin**

Kanella V. Tsilimingras, Nicole Grasso-Correnti, John Fanikos, Samuel Z. Goldhaber, *Brigham and Women's Hospital, Boston, Massachusetts, Harvard Medical School, Boston, Massachusetts.*

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 whom we managed with enoxaparin as a "bridge" to warfarin: 44 with prosthetic heart valves and 11 with CABG and postoperative atrial fibrillation. With respect to efficacy, one patient (1.8%, 95%CI=0.04% to 9.7%) suffered a small embolic stroke without residual neurologic dysfunction three days after hospital discharge following CABG, mitral valve repair, and new onset atrial fibrillation. Two patients, one on day #1 and the other on day #3 after hospital discharge, (3.6%, 95%CI=0.4% to 12%) had bloody pleural effusions requiring thoracentesis. The strategy of enoxaparin "bridging" on an outpatient basis instead of administering inpatient continuous intravenous unfractionated heparin reduced postoperative length of hospital stay by a mean of 4.6 days (range 1-11 days). We calculated the cost-avoidance of the LMWH "bridging" strategy by multiplying each patient's daily bed occupancy cost by the number of outpatient days bridged with enoxaparin. Estimated savings totaled $323,300 and averaged $5,878 per patient. We conclude that "bridging" with LMWH after cardiac surgery is cost-saving by reducing hospital length of stay. However, randomized controlled trials are required to compare the efficacy and safety of "bridging" versus conventional anticoagulation.

POSTER SESSION

1155 Mitral Stenosis

Tuesday, March 19, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 10:00 a.m.-11:00 a.m.

1155-131 **Trends in Rheumatic Valvular Heart Disease: A Longitudinal Study of Hospitalizations in New York State (1983-1999)**

Phyllis G. Supino, Jeffrey S. Borer, Srilatha Atluri, Andrew Yin, *Weill Medical College of Cornell University, New York, New York.*

Background: Acute rheumatic fever (ARF) has increased in the U.S. during the past few decades but the impact of ARF on subsequent R heart disease (HD) and hospitalizations and surgical procedures for R valvular (V) HD is unknown. Methods: For relevant insights, we studied records obtained from the New York State's Statewide Planning and Research Cooperative System (SPARCS) inpatient database for the years 1983 through 1999. All analyzed records had either a principal or secondary diagnosis (ICD-9 code) of RVHD (n=255,958 cases), including aortic and/or mitral stenosis and/or insufficiency, tricuspid RVHD and (rarely) pulmonic RVHD. Linear regression was used to examine temporal variations in hospitalizations and total RVHD-related surgical procedures. Results: During the 17-year interval, hospitalizations including a RVHD diagnosis more than doubled, increasing in linear fashion from 9058 in 1983 to 18,536 in 1999. A similar, but more modest, trend occurred for surgery or percutaneous valvuloplasty (1179 in 1983, 1632 in 1999). Linearized rates of increase in hospitalizations and surgical procedures were 817/yr (r^2 = .92, p<.001) and 37/yr (r^2 = .88, p<.001). The most common isolated RVHD disorder was mitral stenosis; the most frequent surgical procedure was V replacement. Conclusions: During the past 2 decades, hospital-based management of RVHD has increased strikingly in New York State. This may be due to improved detection, increased disease prevalence (possibly due to immigration patterns or to a fundamental change in disease penetration), easier accessibility of VHD therapy, or more effective VHD surgery increasing likelihood of hospital care. Further study must elucidate factors promoting increased utilization of health care resources for RVHD as well as preventive measures to blunt the apparently increasing disease prevalence.

1155-132 **A Proper Range of the International Normalized Ratio for Left Atrial Thrombi Resolution Among Candidates for Percutaneous Transvenous Mitral Commissurotomy Under Oral Anticoagulant Therapy**

Songkwan Silaruks, Bandit Thinkhamrop, Chaiyasith Wongvipaporn, Wirote Tantikosum, Pyatat Tatsanavivat, Virat Klungboonkrong, *Khon Kaen University, Khon Kaen, Thailand.*

Background: Resolution of left atrial thrombus (LAT), by oral anticoagulation (OA), in mitral stenosis can enhance the possibility of safely performing percutaneous transvenous mitral commissurotomy (PTMC). However, the proper range of the international normalized ratio (INR) for this purpose has not been established.
Objectives: To determine the optimal cut-off point for establishing the proper INR range that best predicts the LAT resolution among PTMC candidates under OA.
Methods: From August 1996 to December 2000, all PTMC candidates with LAT were given OA and serially studied by both transthoracic and transesophageal echocardiographic studies. For the INR, most patients were monitored to be within the range of routine cardiology practice (2.0 to 3.0), whereas others were adjusted as they could tolerate. 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: A total of 134 PTMC candidates with LAT (mean age 40.2 ± 7.6) were followed-up for 6-48 months (mean 20.5 ± 6.2). Of 1791 patient-months studied, 85 patients (4.7/100 patient-months) demonstrated resolution of LAT. Of 606 INR samples, the mean of the median of INR was 3.0 ± 0.2 (range 2.3 to 3.5) in the LAT-resolution group (333 INR samples, 89.2% 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 the LAT resolution (area under ROC = 0.997; 95%CI: 0.992 to 1.0). The optimal INR cut-off point was 2.5, establishing the INR range of 1.7 to 2.4 and 2.5 to 3.5. This cut-off point yields the highest performance of such prediction, with the sensitivity 98%, the specificity 100%, and the positive and negative predictive values 100% and 96%, respectively. Eighteen (1.0/100 patient-months) minor bleeding events were observed. No major bleeding was found. Transient ischemic attack occurred in one patient whose median INR was 2.1.
Conclusion: The INR of 2.5 to 3.5 should be recommended as the proper range for successful LAT resolution among candidates for PTMC under OA, with low bleeding complications.