** $P<0.01$.

Conclusions: AV sclerosis and albuminuria predict cardiovascular morbidity and mortality in hypertensive patients with electrocardiographic LV hypertrophy independently of each other and established cardiovascular risk factors, indicating that they are not interchangeable markers of the same atherosclerotic process.

9:30 a.m.

841-5 Mitral Annular Calcification Association With Cardiovascular Events in African Americans: The ARIC Cohort

Doug Harkins, Ervin R. Fox, Herman Taylor, Michael McMullan, Hui Han, Tandaw Samdarshi, Robert Garrison, Thomas Skelton, University of Mississippi Medical Center, Jackson, MS

Background: The prevailing opinion in the medical literature is that mitral annular calcification (MAC) represents a manifestation of atherosclerosis and should alert the clinician to the possibility of cardiovascular disease. Despite the apparent link between MAC and atherosclerosis, there is limited data regarding the correlation between MAC and coronary (CHD) events in African Americans. The objective of this study is to assess if MAC predicts CHD events in the Jackson (completely African American) cohort of the ARIC Study. Methods: The study population included 2193 participants undergoing echo examinations between 1993 and 1996. Participants diagnosed with heart disease prior to visit 3 and participants who did not have adequate visualization of the mitral annulus to assess for MAC on 2D imaging were excluded. The primary outcome was incident CHD event [defined as hospitalized myocardial infarction (MI), ECG (silent) MI, fatal coronary event or cardiac procedure] in ARIC as observed up to 1999. MAC was considered a binary variable (yes/no) and was adjusted for significant confounders including gender, age, BMI, hypertension, diabetes, smoking status, renal function based on serum creatinine, and total cholesterol to HDL ratio. Cox proportional hazard model was used for the analysis. Results: The prevalence of MAC was 4.6% for women and 5.6% for men. The prevalence increased with age. In participants aged 65 years and higher, the prevalence of MAC was 7.1% in women and 8.2% in men. During the 5 year follow up, there were 122 total incident CHD events recorded, 82 of which were hospitalized MI and fatal CHD events. The relative risk of hospitalized MI and fatal CHD events was 2.2 (95% CI, 1.2 to 4.1) for those with MAC. After adjustment, the risk for CHD events among the MAC subgroup was 2.4 (95% CI, 1.1 to 5.0). Broadening the definition of CHD events to include procedures and silent MI the unadjusted relative risk was 2.2 (95% CI,1.2 to 4.1) and adjusted relative risk was 2.0(95% CI,1.04 to 3.9) Conclusions: Despite the low prevalence of MAC in this relatively young population of middle-aged African Americans, the presence of MAC incurs a significant risk for cardiovascular events.

9:45 a.m.

841-6 Effect of Pulmonary Artery Systolic Pressure on Mortality in Patients With Mitral Regurgitation and Normal Systolic Function

Richard V. Milani, Carl J. Lavie, Yvonne E. Gilliland, Mark M. Cassidy, Jose Alberto Bernal, Mahesh Mulumudi, Ochsner Clinic Foundation, New Orleans, LA

Background: Severe degrees of mitral regurgitation (MR) are known to exert an unfavorable prognosis. However, little is known regarding prognosis in patients with milder degrees of MR, particularly in patients with preserved systolic function.
Methods: We quantitated MR by routine color flow Doppler echocardiography and evaluated its independent effect on mortality in 13,488 patients (41% male) with normal systolic function (EF >/= 50%) followed for an average of 3.1 years. We then assessed the additional independent effect of pulmonary hypertension on prognosis in MR in a subset of patients where PAS was obtained (n=7,776)
Results: (See table; *p<0.0001 compared to none and mild, †p<0.0001 compared to all other groups, ‡p<0.05 compared to none and mild).
Conclusions: In patients with normal systolic function, a moderate level of MR is associated with a high mortality when PAS >/= 40 mmHg, similar in magnitude to a severe level of MR. In these patients, consideration should be given to surgical intervention or other measures to reduce PAS pressure.

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	None (5,995)	Mild (6,000)	Moderate (1,152)	Severe (341)
Age (yrs)	58.7±17.9	62.8±17.2 †	71.1±14.0*	71.4±15.0*
EF	60.4±4.7	59.9±4.9†	58.6±5.3*	58.5±5.3*
LVEDD	4.4±0.6	4.5±0.6†	4.6±0.6†	4.8±0.7†
LVESD	2.8±0.6	2.9±0.6†	3.0±0.6†	3.2±0.7†
LVMI	66.2±35.6	70.7±39.0 †	78.7±42.7†	91.2±50.2†
PAS	34.6±13.2	36.7±11.7 †	43.0±13.6†	51.6±18.3†
Mortality	9.4%	9.7%	16.8%*	16.7%*
Mortality PAS < 40 (n=5,208)	7.8%	7.3%	9.0%	9.1%
Mortality PAS >= 40 (n=2,568)	16.5%	16.1%	21.5%‡	20.0%‡

POSTER SESSION

1157 Hemodynamic Observations Following Interventions in Valvular Heart Disease

Tuesday, April 01, 2003, 9:00 a.m.-11:00 a.m.
McCormick Place, Hall A
Presentation Hour: 9:00 a.m.-10:00 a.m.

1157-21 Survival After Valve Replacement for Aortic Regurgitation: Prediction From Noninvasive Contractility Measurement and Comparison With Census-Expected Survival

Jeffrey S. Borer, Edmund M. Herrold, Phyllis G. Supino, Clare A. Hochreiter, Richard B. Devereux, Mary J. Roman, Paul D. Kligfield, O. Wayne Isom, Karl H. Krieger, Andrew Yin, Leonard Hearne, N. Philip Ross, Weill Medical College of Cornell University, New York, NY

Background: In asymptomatic pts with aortic regurgitation (AR) who have nl left ventricular ejection fraction (LVEF) at rest and have not undergone valve replacement (AVR), we showed that contractility (wall-stress[ESS]-adjusted change [Δ] in LVEF from rest to exercise [ex]) from combined echo and radionuclide angiography, is the best objective or clinical predictor of subsequent development of heart failure, subnl LVEFrest or sudden death.
Methods: To confirm its value, in 71 consecutive pts with AR who underwent AVR, we related immediate pre-AVR ΔLVEF-ΔESS, other echo and radionuclide angiographic rest and ex variables, and symptoms, to survival during 12±5 yrs post-AVR, and compared survival to that expected from age- and gender-matched U.S. census data. EFrest was nl pre-AVR in 40/71 pts; 51/71 had pre-op symptoms. Pts were divided into 3 groups according to pre-specified contractility cut-points used in our earlier study of non-AVR pts.
Results: ΔLVEF-ΔESS predicted survival (p=.01); neither symptom status, EFrest, EFex, ΔEF, nor echo LV systolic/diastolic dimensions added significant predictive value. Among prespecified terciles, pts with near nl contractility (ΔLVEF-ΔESS≤-11%) had av annual death risk (AAR) of 1.7 %/yr, indistinguishable from U.S. census data (NS) but better than other terciles (p<.04); pts with ΔLVEF-ΔESS -12% to -17% (middle tercile) had AAR=3.5%/yr (p<.025 vs census); pts with poorest ΔLVEF-ΔESS (≥-17%) had AAR=7.1%/yr (p<.005 vs census).
Conclusions: In parallel with earlier results in non-AVR pts, direct contractility measurement immediately pre-AVR (ΔLVEF adjusted for ΔESS from non-invasive measures) best predicts post-AVR survival compared with other clinical and objective functional/geometric descriptors. Comparison with U.S. census data suggests that, with current surgical methods, pts with well-preserved contractility, irrespective of symptoms, survive post-AVR as well as non-AR persons; in contrast, poor pre-op contractility compromises outcome despite nl LVEFrest and irrespective of symptoms. "Prophylactic" AVR in pts with nl LVEFrest, no symptoms and poor ΔLVEF-ΔESS may prevent further contractility loss and greater post-AVR risk.

1157-22 Aortic Regurgitation: Long-Term Survival in Patients With Different Degrees of Left Ventricular Function Undergoing Surgical Treatment

Pablo Stutzbach, Stella Yala, Sol Garrido, José Abud, Eduardo Dulbecco, Alejandro Machain, Héctor Raffaelli, Roberto R. Favaloro, Favaloro Foundation, Buenos Aires, Argentina

Background: Outcomes of surgical treatment for aortic regurgitation have been mostly reported during the 1980s. However, surgical techniques and treatment of aortic regurgitation improved since then. Therefore, it is necessary to update the information and review left ventricular function parameters in relation to greater mortality rates. Our aim was to analyze long-term survival and prognostic variables in patients undergoing surgery for aortic regurgitation in the past 10 years.
Methods: From August, 1992 to December, 2001, 450 patients underwent surgery for severe aortic regurgitation. Seventy-nine (18%) patients were excluded from the study, since they presented concomitant valvular heart or coronary diseases. Mean age was 52±15 years; 74 (20%) were women, 67 (18%) were asymptomatic, 28 (7.5%) had history of acute pulmonary edema (APE), and 188 (50.6%) had <40% left ventricular ejection fraction (LVEF). Mean left ventricular systolic diameter (LVSD) was 49±5mm. Kaplan Meier curves were used for survival analysis. Log-rank test was used for comparison of survival rates. Cox test was used for multivariate analysis.
Results: Total hospital mortality was 4% (15/371). Female sex (P=.02) and LVEF <40% (P=.002) were the variables associated to greater hospital mortality. Survival at 5 and 8 years was 97.4±0.9% and 83.7±2.9% respectively for the total population. Survival analysis showed significant differences when comparing >40% versus ≤40% LVEF (95% CI, 87-98% versus 78% CI, 81-73%, P=.004) and ≥60mm versus <60mm LVSD (89% CI, 92-84% versus 70% CI, 75-67%, P=.006). Multivariate analysis of the variables associated to mortality showed: age (P=.004), <40% LVEF (P=0.006), ≥60mm LVSD (P=.074), and APE (P=.01).
Conclusion: Patients with isolated aortic regurgitation have low hospital mortality and excellent long-time survival despite LVEF impairment.