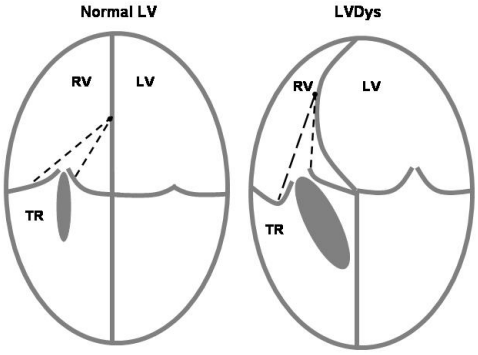
with septal bulging into the RV, with potential for asymmetric changes in leaflet tethering. The potential implications are for TR repair, including relief by alleviating LV remodeling.



8:45 a.m.

868-2 **Cardiovascular Risk Factors and Outcomes in Patients With Definite Endocarditis: The International Collaboration on Endocarditis – Prospective Cohort Study**

Christopher H. Cabell, Stamatios Lerakis, Christine Selton-Suty, Andrew Wang, Vance G. Fowler, Jr., Gilbert Habib, Carlos Mestres, Juan Carlos Pare, Yvette Bernard, Arnold Bayer, Elias Abrutyn, Bruno Hoen, Jose M. Miro, G. Ralph Corey, Gail Peterson, The ICE Investigators, Duke Clinical Research Institute, Durham, NC

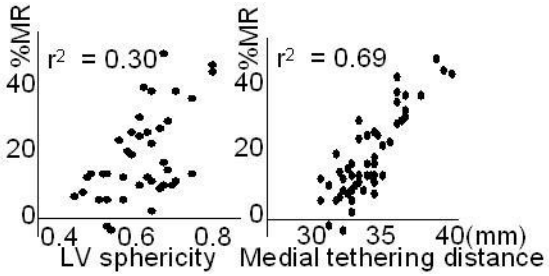
Background: A large international, prospective study of patients with IE has not been done.
Aim of Study: To determine the clinical findings, complications, and outcomes in patients with IE utilizing the International Collaboration on Endocarditis (ICE) Prospective Cohort Study (ICE-PCS).
Methods: ICE-PCS began enrollment 1 January 2000. Through 15 November 2002, 1024 cases of definite IE were enrolled by 34 centers representing 15 countries. Each center utilized a standard case report form.
Results: The median age of the cohort was 57.0 years (IQR 43.0-71.0) and 67.3% of the patients were male. The most common co-morbidities included dialysis dependence (10.0%), diabetes (16.6%), and IV drug use (10.8%). Preceding dental procedures were less common (7.9%) than other invasive procedures (18.7%). Other risk factors for IE included: previous IE (12.0%), congenital heart disease (13.1%), and underlying valvular heart disease (36.0%). The most common organisms were *Staphylococcus aureus* (32.4%), viridans group streptococci (13.1%), and *Enterococcus faecalis* (10.6%). Vegetations were documented by echocardiography in 868 patients (84.9%) Valve involvement was as follows: aortic (40.6%), mitral (49.1%), tricuspid (15.1%), and pulmonic (1.3%). Surgery during the acute episode was common (45.2%) with regurgitation (67.0%) and heart failure (41.3%) the most frequent indications. Complications of IE were frequent: embolic events (stroke 16.7%, other emboli 22.7%), heart failure (31.3%), intracardiac abscess (16.2%), and death (19.4%). In the univariate analyses the strongest predictors of death were: age, diabetes, hemodialysis, chronic indwelling intravenous catheters, stroke, heart failure, and intracardiac abscess (p<0.001 for all). The causative microorganisms with the highest mortality were as follows: coagulase negative staphylococci (26.0%), *Staphylococcus aureus* (24.2%) and Enterococci (21.1%) (p=0.002 for all).
Conclusion:. Even in the modern era of antimicrobial therapy and sophisticated surgical techniques, patients with IE during the initial hospitalization remain at significant risk for both serious complications and death.

9:00 a.m.

868-3 **Comparison of Left Ventricular Sphericity and Papillary Muscle Tethering in the Mechanism of Ischemic Mitral Regurgitation in Patients With Inferior Myocardial Infarction**

Takeshi Uemura, Yutaka Otsuji, Toshiro Kumanohoso, Kunitsugu Takasaki, Toshinori Yuasa, Kenichi Nakashiki, Bo Yu, Akira Kisanuki, Shinichi Minagoe, Robert A. Levine, Chuwa Tei, Kagoshima University, Kagoshima, Japan, Massachusetts General Hospital, Boston, MA

Background: Spherical left ventricle (LV) causes outward displacement of papillary muscles (PMs) to induce leaflet tethering and ischemic mitral regurgitation (MR). However, ischemic PM elongation can potentially attenuates effects of increased LV sphericity on the ischemic MR, resulting in relatively weak relation between LV sphericity and severity of MR.
Methods: In 50 consecutive patients with previous inferior MI, LV volume, LV ejection fraction, mitral annular area, PM tethering distance, LV sphericity (LV short to long axis dimension ratio in the apical 2-chamber view) and MR fraction were quantified by 2-dimensional and Doppler echocardiography.
Results: 1) LV sphericity had significant but only fair correlation with % MR fraction (r^2 =0.30, p=0.001) due to multiple patients with ischemic PM elongation and only modest MR despite spherical LV. 2) In contrast, medial PM tethering distance had better correlation with %MR fraction (r^2 =0.69, p<0.001).
Conclusion: In the genesis of ischemic MR, LV sphericity, as opposed to tethering distance, is an indirect determinant, which can be affected by ischemic PM elongation.



9:15 a.m.

868-4 **Natural History of Insignificant Mitral Regurgitation Following Aortic Valve Replacement for Degenerative Aortic Valve Disease**

Shalini Sharma, Padmini Varadarajan, Ramdas G. Pai, Loma Linda University Medical Center, Loma Linda, CA

Background: Mitral regurgitation (MR) is common in patients with denerative aortic valve disease (AVD). Though the natural history following aortic valve replacement (AVR) of significant accompanying MR is known, that of normal or nearly normal mitral valve function is uncertain.
Methods: One hundred and forty-seven patients who had AVR for degenerative AVD and ≤2+ MR (on a 1-4 scale) on a preoperative echocardiogram were followed up for a mean of 489 days with a second echocardiogram. Patient characteristics: age 63±13 years, 69% male, EF 50±16%, 65% had CABG. Reason for AVR was severe aortic stenosis in 54% and mixed aortic valve disease in the rest. Development of 3 or 4+ MR was related to clinical, operative and echocardiographic variables.
Results: On the follow-up echocardiogram 3 or 4+ MR developed in 25 (17%) patients: 1 (2%) of the 44 patients with no preoperative MR, 8 of the 54 (15%) patients with 1+ preoperative MR and 16 (33%) of the 49 patients with 2+ preoperative MR. Risk factors for the development of 3-4+ MR included female gender (p=0.05), greater age (68±11 vs 62±14 years, p=0.03), presence of left main disease (24 vs 10%, p=0.05) and greater degree of preoperative MR (grade 1.6±0.6 vs 0.9±0.8, p<0.0001). Reduction in LV size (p=0.08) following AVR was marginally protective.
Conclusion: 1) Significant (3-4+) MR may develop de novo over an intermediate term follow-up in up to 33% of patients undergoing AVR. 2) Risk factors for its development include female gender, older age, presence of left main disease and greater degrees of preoperative MR. 3) Precise mechanism of its genesis and medical and surgical strategies to its prevention need further investigations.

9:30 a.m.

868-5 **Effects of Ramipril on Left Ventricular Size, Mitral Regurgitation Severity, Exercise Time, and Quality of Life in Asymptomatic Patients With Mitral Regurgitation**

Kevin M. Harris, Charles F. Carey, Karen Bachnick, Betsy Wilson, Kristi Goertz, Minneapolis Heart Institute Foundation, Minneapolis, MN, Washington University School of Medicine, St. Louis, MO

There is no proven medical treatment for asymptomatic chronic mitral regurgitation (MR) which progresses over time to a symptomatic state. Small studies have offered conflicting results regarding the use of ace-inhibition. We assessed the effects of ramipril in asymptomatic patients with chronic moderate to severe MR over a 6 month interval.
Methods: We assessed the effects of ramipril (5 mg bid) on 24 patients (mean age 49 ± 15 years) with moderate to severe MR. Echocardiographic assessment of MR severity and left ventricular (LV) size were assessed at baseline and at 6 months. Exercise time, neurohormonal levels and the Minnesota Living with Heart Failure score (MNLHF) were also assessed.
Results: Systolic blood pressure was lower (133 ± 23 vs 123 ±15, mm HG , p=0.04) at a mean f/u of 188 days. LV cavity size was similar as assessed by LV diastolic size (5.4 ± 0.5 vs 5.3 ± 0.6cm, P=NS) and LV end systolic volume index (21 ± 8 vs 21 ± 8 ml/m^2, p=NS). There was a trend towards reduction in effective regurgitant orifice (45 ± 4 vs 33 ± 3 mm^2, p=NS) but no change in MR as % of left atrial area (35 vs 36% , p=NS). There was no change in exercise time (585 ± 219 seconds vs 583 ± 200 , p=NS) or MNLHF scores (10 ±11 vs 10 ± 9, p=NS) . There was additionally no change in atrial natiuretic factor (50 ± 51vs 56 ± 46, p=NS), or norepinephrine (247 ± 112 vs 258 ± 76, p=NS).
Conclusions: Treatment of patients with MR with ace inhibition over a 6 month interval did not result in a significant reduction in LV cavity size or MR severity. We noted no significant change in exercise time, neurohormone levels or quality of life score despite a lower SBP at f/u. Further study will be needed to determine if there is a role for ace inhibition in selected patients with mitral regurgitation.