

NS). However, patients developing AV sclerosis after inclusion had higher mean diastolic blood pressure after four years of treatment (83 vs. 80 mmHg, $P<0.01$). The incidence of AV stenosis was higher in patients with AV sclerosis compared to those with normal valves at baseline after one year (2.8% vs. 0.4%, $P<0.001$) and four years (6.9% vs. 0.9%, $P<0.001$) of treatment. **Conclusion:** The prevalence of AV sclerosis and mild AV stenosis increased quickly in an elderly high-risk hypertensive population and could not be prevented by treatment with losartan. Development of new AV sclerosis or stenosis was associated with suboptimal diastolic blood pressure control. Patients with AV sclerosis had significantly higher risk of progressing to mild AV stenosis, suggesting that AV stenosis often is preceded by sclerosis in hypertension.

1:12 p.m.

1109MP-167 Association of Cardiovascular Risk Factors to Aortic Valve Calcification as Quantified by Electron Beam Tomography

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Electron beam tomography (EBT) allows the detection and exact quantification of calcifications in coronary vessels (CC) and in the aortic valve (AVC). The aim of this study was to analyze the association of cardiovascular risk factors, CC and AVC.

Methods: We analyzed cardiac EBT data sets of 1000 consecutive patients (57.1±10 years, 69% men) without an established diagnosis of coronary artery disease, which had been obtained for the detection of CC on an outpatient basis. In all patients, atherosclerotic risk factors (hyperlipidaemia [HL], hypertension [HTN], diabetes [DM], smoking) were documented. In all EBT studies, the amount of CC ("Agatston Score") and of AVC (volumetric score) was measured.

Results: In 17.7% of patients, AVC were found (volume score $41.6\pm 219 \text{ mm}^3$). In 82.9%, CC were present (Agatston Score 270.3 ± 615). The amount of AVC and CC showed a weak but statistically significant correlation ($r=0.21$, $p<0.001$). AVC were more frequently found in patients with CC as compared to patients without CC (20.5% vs. 3.8%, $p<0.001$), in patients with HL [19.5% vs. 6.5%, $p<0.001$], HTN [21.7% vs. 13.9%, $p=0.01$] and DM [30.7% vs. 16.6%, $p=0.002$]. No statistically significant correlation was observed for smoking [19.4% vs. 15.6%, $p=0.11$]. AVC were found in 2.4% of patients without atherosclerotic risk factors, but in 33.3% of patients presenting all 4 risk factors ($p<0.001$). The mean volume of AVC was significantly increased in patients with HL ($48.0\pm 237 \text{ mm}^3$ vs. $5.7\pm 39 \text{ mm}^3$, $p<0.001$) and DM ($93.9\pm 379 \text{ mm}^3$ vs. $37.5\pm 201 \text{ mm}^3$, $p=0.03$), while no such relationship was observed for smoking ($46.0\pm 222 \text{ mm}^3$ vs. $36.3\pm 216 \text{ mm}^3$, $p=0.2$) and HTN ($52.1\pm 259 \text{ mm}^3$ vs. $32.5\pm 176 \text{ mm}^3$, $p=0.1$).

Conclusion: In this study, a significant association was found between atherosclerotic risk factors, coronary calcifications and the presence and amount of calcifications of the aortic valve.

12:48 p.m.

1109MP-169 Relation of Mitral Annular Calcification to Cardiovascular Risk Factors and Cardiovascular Mortality in Adults With Type 2 Diabetes: The Strong Heart Study

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Background: Mitral annular calcification (MAC) is frequently seen on routine echocardiogram in adults with type II diabetes (DM). However, whether MAC is associated with cardiovascular (CV) risk factors and subsequent CV events is not well defined. **Methods:** We compared two groups of DM American Indians based on the presence ($n=182$) or absence ($n=1278$) of MAC on echocardiogram. **Results:** DM with MAC were older (63 vs. 60 years) with higher systolic blood pressure (136 vs. 133 mm Hg), higher total cholesterol (193 vs. 188 mg/dl) and higher urinary creatinine/albumin ratio (uacr) (1093 vs. 698, all $p<0.001$) as compared to DM without MAC. There was no difference in gender, body mass index or prevalence of smoking. DM with MAC had higher left ventricular (LV) mass (176 vs. 161 gm), higher prevalence of LV hypertrophy (18 vs. 10%), lower stress-corrected midwall shortening (98 vs. 103%) and lower mitral E/A ratio (0.75 vs. 0.81, all $p<0.005$) as compared to DM without MAC. The prevalence of coronary heart disease and CV mortality and total mortality are as shown.

On multivariate analysis adjusting for age, systolic blood pressure, cholesterol and uacr, MAC was not found to be independently associated with prevalence of coronary heart disease, CV and total deaths. CONCLUSION: MAC is associated with abnormal LV structure and function in the DM population. The higher prevalence of coronary heart disease and a higher total mortality in DM with MAC is likely mediated by a larger burden of CV risk factors

	No MAC	MAC	P value
Prevalence of coronary heart disease	7.2%	11.7%	0.03
CV Death	3.9%	2.4%	NS
All Death	8.9%	13.1%	0.05

1:24 p.m.

1109MP-170 Impact of Systolic Hypertension and Impedance Lowering Drugs on Clinical Outcomes in Chronic Severe Aortic Regurgitation

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Background: The prevalence of systolic hypertension (HTN) coexisting with aortic regurgitation (AR) and the impact of HTN on AR natural history are poorly defined. Such data are important: previous trials of impedance lowering drugs (ILRx) for AR were done largely in pts with HTN and suggest improvement in LV size and function. However, few data have elucidated ILRx effect on clinical outcome and ILRx effect in AR without HTN is unknown. To explore these issues, we retrospectively reviewed our ongoing prospective study of AR natural history and outcome predictors.

Methods: Among 73 unoperated pts with chronic severe AR (83% male, 44 ± 15 yrs old at entry) who entered the study asymptomatic with normal LV ejection fraction (EF) at rest(r), we related HTN (history and/or study entry systolic blood pressure >140) to subsequent cardiac events (CE) during 7 ± 4 event-free yrs. We also evaluated ILRx effect in pts with and without HTN.

Results: At study entry, 29/73(40%) pts had HTN; 17/29(59%) pts with HTN and 3/44(7%) without HTN were taking ILRx chronically (not protocol-mandated): diuretics(8 pts), ACE inhibitors(5 pts), direct vasodilators(4 pts), combination ILRx(3 pts). During follow-up, 2 pts died suddenly, 17 pts developed CHF \pm subnl LVEF and 5 developed subnl LVEF alone. HTN predicted increased risk of CE (9.2%/yr vs 3.2%/yr without HTN, $p=0.02$) and remained predictive after adjustment for age and gender ($p<0.02$). Among pts with HTN, risk for CE was 4-fold greater in pts taking ILRx chronically (15.5%/yr) vs those without chronic ILRx use (3.7%/yr, $p<0.02$); among pts without HTN, risk was 0% with ILRx vs. 3%/yr without (NS) but small subgroup size limits inferences in these pts.

Conclusions: Systolic HTN occurs frequently in asymptomatic pts with chronic severe AR and portends a poor clinical outcome. Data were insufficient to evaluate individual drug classes but ILRx as a group do not mitigate the impact of HTN; at least some of these drugs may be deleterious. ILRx effect in pts without HTN remains unclear. Future research must determine why theoretically beneficial ILRx was ineffective for clinical outcome and, specifically, whether drug class, dose, etc., interact with clinical effect.

1:36 p.m.

1109MP-171 Early Predictors of Mortality in Patients With Endocarditis

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Background: Infective endocarditis (IE) is associated with significant mortality, but prognostic factors remain poorly defined. We evaluated early prognostic factors in patients with IE, including severity of illness, to determine those independently associated with death.

Methods: Clinical, microbiologic and echo data of patients with definite or possible IE by Duke criteria from 1996-2001 ($n=351$) were collected prospectively in the Duke IE data-

1109MP-168 Risk Stratification in Mild and Moderate Aortic Stenosis by Assessment of Aortic Valve Calcification

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Background: The degree of aortic valve calcification (AV-Calc) has been shown to be a significant predictor of outcome in severe aortic stenosis (AS). In addition, aortic sclerosis has recently been reported to be associated with increased mortality. However, it remains unknown whether the degree of AV-Calc is of prognostic value in mild and moderate AS.

Methods: 176 consecutive pts. (73 F, age 58 ± 19 yrs) with mild to moderate AS (peak aortic jet velocity (AV-Vel) between 2.5 and 4.0 m/s) were followed for 51 ± 18 mths. The degree of AV-Calc and other risk factors were assessed. The rate of hemodynamic progression was determined and the clinical outcome analyzed.

Results: During follow-up, 15 cardiac and 19 non-cardiac deaths occurred. Mortality was 1.8 times higher than that of an age and gender - matched control population ($p<0.005$). Kaplan-Meier event-free survival for the entire pt. group, with endpoints defined as death ($n=34$) or aortic valve surgery ($n=33$) was $95\pm 2\%$ at 1 yr, $75\pm 3\%$ at 3 yrs, and $60\pm 5\%$ at 5 yrs. By multivariate analysis, moderate or severe AV-Calc, coronary artery disease (CAD) and AV-Vel at entry were significant independent predictors of outcome ($p<0.001$, $p<0.01$ and $p<0.01$, respectively). Event-free survival for patients with moderate or severe AV-Calc was $92\pm 4\%$ at 1 yr, $61\pm 7\%$ at 3 and $42\pm 7\%$ at 5 yrs versus 100%, $90\pm 4\%$ and $82\pm 5\%$ for patients with no or mild AV-Calc. Diabetes, hypercholesterolemia and hypertension did not predict outcome. The rate of hemodynamic progression was significantly faster for pts. with event (0.43 ± 0.04 m/s/yr) than for those without (0.14 ± 0.02 m/s/yr, $p<0.0001$). Of 129 pts. with a follow-up echocardiographic exam, 59 (46%) developed severe AS during follow-up.

Conclusion: Rapid progression to severe AS and an increased mortality have to be considered in mild and moderate AS. Particularly pts. with significant AV-Calc but also those with CAD and pts. with a rapid progression of the AV-Vel have a poor outcome. Serial Doppler studies and the assessment of AV-Calc are important for the management of these pts. as they identify high-risk pts. who require closer follow-up than currently recommended.

1:00 p.m.