As compared to patients of Group 1, those of Group 2 were younger (47±14 vs 41±15 years, p<0.001), and showed less advanced LV dysfunction (EF 28±9 vs 35±9%, p<0.001) and remodelling (end-diastolic diameter index 38±7 vs 35±7 mm/m2, p<0.001) at the time of diagnosis. Most patients of Group 1 and 2 were treated with ACE-I (93% and 88%, p=NS) and BB (83% and 74%, p<0.05).
Five and 10-year transplant-free survival was respectively 73 and 57% in Group1 vs 93 and 86% in Group 2, while hospitalisation-free survival was 47 and 32% in Group1 vs 70 and 57% in Group 2 (both p<0.001). No outcome difference was observed between Group 2a and 2b, whereas 5 and 10-year transplant-free survival was significantly better in patients of Group 2 who were treated with BB than in those not receiving BB (p=0.007 after stratification for the severity of the disease).
At 6 to 8 years of follow-up, 38% of patients of Group 2 developed HF symptoms, and/or a decrease of LVEF>10%, and/or the need of hospitalisation for cardiovascular reasons. The long-term progression of HF symptoms and LV dysfunction was similar in asymptomatic patients of Group 2a and 2b and not significantly different to that of patients of Group 1.
Even though asymptomatic DC patients receiving an optimal medical treatment are characterized by low rates of death or heart transplant, nevertheless during a long-term follow-up they frequently exhibit a worsening of clinical status and LV function. Our data suggest that in these patients an early and aggressive BB strategy should be carefully considered in order to counteract as much as possible the long-term progression of the disease.

1158-150 Functional Significance of Myocyte Endothelin-1 in Experimental Chronic Chagasic Cardiomyopathy

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Background. *Trypanosoma cruzi*, the etiologic agent of Chagas' disease, is an important cause of chronic cardiomyopathy. Endothelin-1 (ET-1) has been implicated in the pathogenesis of chronic chagasic heart disease, possibly due to its effect on the coronary microvasculature. **Aim and Methods**. In order to assess the role of ET-1 in the pathogenesis of chronic chagasic cardiomyopathy, we infected ET-1 (flox/flox); α-MHC-Cre (+) (ETKO) mice, in which the ET-1 gene has been deleted from cardiac myocytes, with 10^4 trypomastigotes of *T. cruzi* (Brazil strain). We also infected ET-1 (flox/flox); Cre (-) (FLOX) mice. Uninfected littermates of both groups served as controls. All mice (n=28) survived and were evaluated at 160-170 days post infection by transthoracic echocardiography. Left ventricular (LV) end diastolic diameter (EDD), relative wall thickness (RWT), and fractional shortening (FS) were measured. Right ventricular (RV) size was assessed semi-quantitatively on a scale of 0-3. **Results**. Compared with their respective, uninfected controls, both infected ETKO and FLOX mice had increased LV EDD[(3.8±0.3 v 2.7±0.1mm, FLOX), and (3.0±0.1 v 2.6±0.1mm, ETKO), both p<0.05], along with reduced LV FS[(40±3 v 53±1%, FLOX) and (47±2 v 56±2%, ETKO), both p<0.05] and RWT[(0.4±0.0 v 0.5±0.0, FLOX) and (0.5±0.0 v 0.6±0.0 ETKO), both p<0.05]. However the magnitude of these changes was attenuated in the infected ETKO group as compared with the infected FLOX group (p<0.05 for LV EDD, RWT, and FS). Similarly, RV was larger in infected FLOX compared with ETKO (2.5±0.3 v 0.6±0.3, respectively, p<0.01). **Conclusions**. These data provide support for the role of ET-1 in pathogenesis and progression of chronic chagasic heart disease and indicate that the cardiac myocyte is an important source of ET-1 in this disease.

1158-151 Mitochondrial Respiratory Abnormalities in Ventricular Myocardium of Patients With End-stage Congenital Heart Disease

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Background: Nitric oxide (NO) binds to mitochondrial cytochrome oxidase to decrease myocardial oxygen consumption (MVO2). This regulation is disrupted in end-stage heart failure in part due to reduced NO availability. We compared NO mediated regulation of MVO2 in patients with end-stage congenital heart disease (CHD) vs cardiomyopathy (CMP) undergoing cardiac transplantation.
Methods: MVO2 was measured in vitro using a Clark type oxygen electrode in LV muscle segments obtained from explanted failing human hearts at heart transplantation. This included 7 pts with complex CHD (mean age 11±10 years) and 14 pts with dilated CMP (mean age 25±26 years). We measured the effect of increasing doses (10-7-10-4M) of the following NO agonists on MVO2 - amlodipine, ramiprilat, bradykinin - all of which cause kinin-dependent NO production, and exogenous NO donors, S-nitroso N-acetyl penicillamine (SNAP) and nitroglycerin (NTG). MVO2 was measured with and without addition of nitro-L-arginine methyl ester (L-NAME, 10-4 M), NO synthase inhibitor.
Results: All drugs caused a significant dose-dependent decrease in MVO2 in both groups. However, myocardium from CHD pts showed a smaller decrease in MVO2 in response to NO agonists compared to CMP pts. Changes in MVO2 at highest dose in CHD vs CMP respectively are shown - amlodipine, -5±7% vs -29±6%, p<0.001; ramiprilat, -17±8% vs -26±2%, p=0.05; and bradykinin, -22±7% vs -30±5%. NO donors, SNAP and NTG also caused smaller decreases in MVO2 in CHD vs CMP (SNAP, -37±4% vs -49±3% and NTG, -16±6% vs -37±4% respectively)(p<0.01). Therefore, NO donors were unable to completely reverse altered regulation of MVO2 in CHD suggesting abnormal mitochondrial function. L-NAME, NO inhibitor, attenuated the effect of amlodipine, ramiprilat and bradykinin but not of SNAP and NTG.
Conclusion: Abnormal regulation of MVO2 in end-stage heart failure may be secondary to reduced NO availability and can be reversed by use of NO agonists. In end-stage CHD, however, this abnormality may be related at least in part to abnormal mitochondrial function.

1158-152 Improved Glycemic Control Induces Regression of Left Ventricular Mass in Patients With Type 1 Diabetes Mellitus

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Background: Diabetes mellitus has been associated with abnormalities of cardiac function and left ventricular hypertrophy. However, the effect of improved glycemic control on these parameters is controversial and may be confounded by the type of glycemic therapy or alterations in blood pressure levels.
Methods: We studied 19 patients (mean age 40 ± 9 years) with longstanding type I diabetes mellitus (28 ± 4 years), who participated in a program of stringent glycemic control using insulin injections. Glycemic control was monitored with hemoglobin A1c (Hb A1c) levels; improvement was defined as > 1 % (absolute) decrease of Hb A1c. Two-dimensional and Doppler echocardiograms and 24-hour ambulatory blood pressures (24h ABP) were obtained at baseline and after 1 year. Left ventricular (LV) mass was determined using the area-length method.
Results: Hb A1c and echocardiographic data (mean ± SD) are shown below. Septal thickness decreased for all patients; septal thickness and LV mass regressed for the subgroup with improved glycemic control. Left ventricular function and 24h ABP parameters remained unchanged after 1 year in both groups.
Conclusions: Improved glycemic control induces regression of septal thickness and LV mass without significant effect on systolic or diastolic function. Importantly, these changes occurred in the absence of significant alterations in 24h ABP levels.

	All Patients (n=19)		Patients with improved glycemic control (n=12)	
	Baseline	1 Year	Baseline	1 Year
Hemoglobin A1c (%)	9.5 ± 1.6	8.2 ± 1.5*	9.8 ± 1.5	7.8 ± 1.2*
LV mass (gm)	203 ± 53	185 ± 59	205 ± 35	182 ± 46†
LV septum (mm)	10.3 ± 1.3	9.7 ± 1.6†	10.3 ± 1.4	9.4 ± 1.7†
LV posterior wall (mm)	9.9 ± 1.4	9.6 ± 1.1	9.9 ± 1.3	9.6 ± 0.9
LV diastolic diameter (mm)	46 ± 5.8	46.9 ± 5.7	45.3 ± 4.1	46.3 ± 4.1
LV systolic diameter (mm)	28.2 ± 4.2	28.3 ± 5.8	27.4 ± 3.6	27.7 ± 4.9
Fractional shortening (%)	38.7 ± 5.3	40.2 ± 6.9	39.5 ± 5.7	40.5 ± 6.9
E/A ratio of mitral inflow	1.23 ± 0.4	1.29 ± 0.5	1.25 ± 0.4	1.33 ± 0.5
E-wave deceleration time (ms)	191 ± 40	188 ± 37	176 ± 33	190 ± 40

*p<0.001 vs baseline, †p<0.05 vs baseline

POSTER SESSION

1159 Stress Testing in Coronary Artery Disease: New Information

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

1159-137 Impact of Percutaneous Coronary Intervention on Functional Status: Results from the ADORE Trial

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Background:
While it is well known that percutaneous coronary intervention (PCI) is effective at reducing angina and other markers of coronary artery disease (CAD), little is known about the magnitude of functional status and angina class improvement as well as the magnitude of anti-anginal drug use after PCI in the general post-PCI patient population.
Method:
To determine the magnitude to which PCI effects functional status, angina class and anti-anginal drug use, 9-month post-PCI results were compared with results obtained 3-months prior to PCI in 109 patients. Patients were enrolled in the Aggressive Diagnosis Of Restenosis (ADORE) Trial, a randomized clinical trial which examined functional testing in patients who underwent complete coronary revascularization by a percutaneous technique.
Results:
A significant improvement in functional status, measured by an increase in METS, was observed 9-months after PCI when compared to 3-months prior (9.7 vs 7.4, p<0.0001). In addition, a significant difference was found between 9-month post-PCI functional test results and those obtained 3-months prior: reversible ischemia detected by ECG (19.4 vs 63.0, p< 0.0001), clinically determined reversible ischemia (10.2 vs 58.6, p<0.0001), and electrically or clinically positive functional test result (23.4 vs 83.7, p<0.0001). A significant improvement in CCS angina class was also found post-PCI (CCS class 1 or 2: 24.5 vs 43.5, p=0.001, and CCS class 3 or 4: 1.0 vs 46.3, p<0.0001). A marked decrease in anti-anginal drug use was further noted after PCI (16.0 vs 30.6, p=0.0001).
Conclusions:
Complete revascularization with PCI leads to substantial improvements in functional status and CCS angina class, and is associated with decreased use of anti-anginal drugs.Thus, this procedure is beneficial in patients with CAD.