mance of gated Thallium-201 (Tl) and Tc-99m sestamibi (MIBI) in 302 women, hypothesizing that advances in technology and imaging protocols would negate importance of radionuclide choice.
Methods: 3 experienced readers, blinded to all clinical information, scored 604 randomly presented non-gated and gated SPECT scans in 302 women - 152 imaged with Tl and 150 with MIBI. Patients were imaged using LEAP (Tl) or LEHR (MIBI) collimators, dual 90^{o} detectors and weight-adjusted dosages of Tl (3.0-4.5 mCi) and MIBI (25-40 mCi). Tl images were acquired using a previously described time-adjusted acquisition according to counts from a pre-scan planar image. Body mass index (BMI) was 30+/-7 (range 16 - 47) and age 63+/-12 years. There were 101 (33%) low likelihood women and 201 had cath $\leq$ 60 days (0 VD 61(30%), SVD 72 (36%), MVD 68 (34%)). Multivariate statistical analysis was performed for relative sensitivity, specificity, and normalcy of the 2 radionuclides, after controlling for age, type of stress, BMI, CAD distribution, and image quality.
Results: Image quality (Tl vs MIBI) was excellent in 92% vs 90% (p=NS). Interpretive certainty improved for both tracers with gating: 70% definitely normal or abnormal without vs 79% with gating (p=0.05). ECG-gated SPECT tracer-combined normalcy was 92%, sensitivity 86% and specificity 66%. Logistic analysis showed no significant difference between the radionuclides for correctly recognizing low likelihood or cath normals, but Tl had higher sensitivity for CAD detection (p=0.0004).
Conclusion: This large blinded interpretive study of SPECT scanning in women demonstrated that contemporary SPECT provides high quality images independent of tracer and that ECG-gating improves interpretive certainty for both Tl and MIBI. Normalcy and specificity appear independent of radionuclide, BMI, type of stress, and age of patient. After controlling for these variables, Tl had higher sensitivity for detection of CAD in women.

1056-157 Serial Testing With Rest/Stress Tc-99m Sestamibi Myocardial Perfusion Imaging: Normal Results Provide an Extended Warranty

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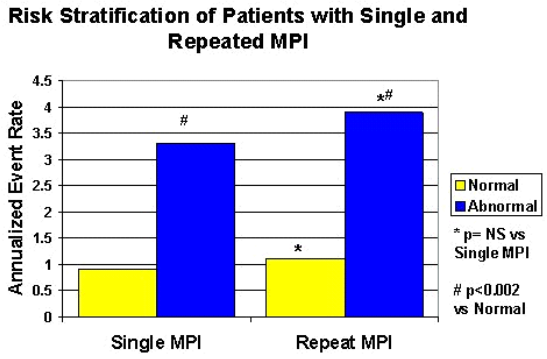
Background: Patients with known or suspected CAD with normal rest/stress Myocardial Perfusion Imaging (MPI) have low cardiac event rates (1%/yr), a "Warranty Period" of 2-3 years. Cardiac risk after repeat symptom-guided testing has not been evaluated.
Objective: To evaluate the impact of repeat symptom-guided MPI in patients with prior normal MPI upon subsequent risk stratification.
Methods: The database of rest/stress Tc-99m sestamibi MPI at Hartford Hospital from 1996-2001 was queried for patients with multiple studies whose first study was normal (N= 694) and those with a single study (N= 9587). Patients were prospectively followed for cardiac death/non-fatal MI (23.6 +/- 12.8 months after repeat test, and 25 +/- 14.6 after single test). The inter-test interval was 798 +/- 462 days. MPI was classified as normal or abnormal (fixed and reversible). No patients had MI between tests.
Results: Patients who remained normal on repeat testing had a very low cardiac event rate (11/526), similar to patients with only 1 normal test (86/6192) 1.1%/year vs. 0.9%/year p=NS. Patients who converted to abnormal had an increased event rate (13/168) similar to those with only one abnormal test (234/3395) 3.9%/year vs. 3.3/year p=NS.
Conclusion: Repeat testing of symptomatic patients with known or suspected CAD with prior normal MPI is an effective means of further risk stratification. The "Warranty Period" for patients extends approximately 2 years after the most recent normal symptom guided MPI.



1056-158 Stability of Right and Left Ventricular Ejection Fractions and End-Diastolic Volumes After Heart Transplantation

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Background: Acute changes in RV pressure early after heart transplantation have been well described and pulmonary resistance predicts early graft viability. Additionally, changes in LVEF are known to accompany the development of graft vasculopathy and rejection. However, the long-term stability of the RV and LV size and function have not been well characterized. We have recently validated the ability to accurately measure RV and LV EF and volumes with SPECT equilibrium radionuclide ventriculography (RVG). The objective of this study was to assess time- and rejection-dependent changes in RV and LV function following cardiac transplantation.
Methods: 71 consecutive patients (mean age 57 +/- 12 (SD) years, 62M/9F) were studied 61 +/- 47 months (range 11-193) after heart transplantation. The mean frequency of >grade 2 rejection was 1.7 +/- 1.8 episodes (range 0-7). RV and LV EF and end-diastolic volume (EDV) in patients were compared with 34 subjects at low likelihood for CAD (mean age 52 +/- 16 years, 11M/23F).
Results: Although RV EDV was slightly higher in patients with heart transplants, no significant differences in RV or LV EF or EDV compared with controls were observed.
Conclusion: Although acute RV failure decreases survival in the early post transplant period, RV as well as LV EF and EDV are stable greater than 1 year after heart transplantation for up to 16 years. Thus, changes in EF or EDV in the transplanted heart are abnormal and should prompt a clinical evaluation.

	Controls (n=34)	Transplant (n=71)	p
RVEF	54 +/- 9	53 +/- 9	NS
RVEDV (ml)	109 +/- 35	120 +/- 32	NS
LVEF	72 +/- 8	73 +/- 9	NS
LVEDV (ml)	108 +/- 28	98 +/- 20	NS

1056-159 Prognostic Utility of SPECT in Adult Patients With Hypertrophic Cardiomyopathy

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Background. Data derived from stress myocardial perfusion imaging (MPI) carries prognostic significance in young patients with hypertrophic cardiomyopathy (HCM), but there are limited data on its utility in those who are older.
Methods and Results. Between January 1986 and September 2000, 158 patients (96 men) with HCM who were aged $\geq$18 years (mean, 60 yrs) underwent exercise or pharmacologic stress MPI. Using a 14 myocardial segment model with 5 perfusion grades (absent = 0 to normal perfusion = 4), the summed stress score (SSS) and summed reversibility score (SRS) were calculated for each patient. Follow-up was 99% complete in 157 patients at a median duration of 5.2 yrs. Ten-year unadjusted cardiovascular survival was poorer in HCM patients with abnormal stress MPI (67% [95% CI, 53 to 85%] than among those with normal studies 89% [80 to 100%]; *p*=0.04). The continuous variables of SSS (hazard ratio, 0.93; 95% CI, 0.88 to 0.98; *p*=0.01) and SRS (1.08, 1.01 to 1.16; *p*= 0.04) were both also univariate predictors of cardiac death.
Conclusions. In a predominantly older population of patients with HCM, stress MPI identifies those at increased risk of cardiovascular death. Patients with HCM who have normal stress MPI have an annual risk of cardiovascular death of 1.1%, only slightly higher than that reported for less selected patients with suspected CAD and normal MPI.

1056-160 Myocardial Sympathetic Denervation Precedes the Neurological Involvement in Patients With Familial Amyloidotic Polyneuropathy

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Background: Familial amyloidotic polyneuropathy (FAP) type I is a rare hereditary form of amyloidosis characterized by polyneuropathy and progressive autonomic nervous system dysfunction. Cardiovascular manifestations are due to amyloid deposits in the heart and to the autonomic dysfunction. The aim of this study was to assess the cardiac involvement in FAP patients and to correlate the findings with the neurological status.
Methods: 45 patients with FAP (mean age = 43 ± 14 years) underwent I^{123}-metaiodobenzylguanidine (MIBG) myocardial scintigraphy, in order to evaluate sympathetic innervation, ambulatory blood pressure monitoring (ABPM), 24 hour Holter and echocardiography. The neurological involvement was quantified according to an electromyographic score (0-100%; 0 = no abnormality, 100% = maximal incapacity)
Results: The MIBG uptake was 1.8 ± 0.5 (normal = 2.6 ± 0.3) and correlated inversely with the EMG score (r = -0.81; p = 0.0001). Thirty-nine (87 %) patients had a decrease in MIBG activity, 23 (51 %) abnormal circadian BP pattern and 23 (51 %) conduction disturbances or arrhythmias. Finally 21 (46%) patients showed septal thickness increase and/or diastolic dysfunction. Thirty patients were symptomatic with an EMG score of 38 ± 24 % (group I) and the remaining 15 were asymptomatic [EMG score = 0 (group II)]. Patients in the group I were older (46 ± 14 vs. 36 ± 12 years, p = 0.02), had lower MIBG uptake (1.6 ± 0.4 vs. 2.1 ± 0.3, p = 0.0001), higher systolic (117 ± 17 vs. 104 ± 5 mm Hg, p = 0.006) and diastolic BP at night (70 ± 12 vs. 60 ± 5 mm Hg, p = 0.002) and higher septal thickness (12 ± 2 vs. 9 ± 2 mm, p = 0,001) than patients in group II.
Cardiac MIBG uptake was decreased in 28/30 patients in the group I and in 11/15 in the group II. ABPM and Holter recording were both altered in 21 patients in group I and in 2 in group II. Septal thickness was increased in only one asymptomatic patient, being the others symptomatic.
Conclusions: Patients with FAP have a high incidence of myocardial sympathetic denervation that often antedate the development of neurologic and cardiac impairment. This finding may be useful to determine the timing for liver transplantation, which is nowadays the only way to control the progression of the disease.