906-50 Left Ventricular Dilatation Is Associated With Increased Risk of Congestive Heart Failure: The Framingham Heart Study

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We examined the relations of M-mode echocardiographic LV end-diastolic ($LVID_{ed}$) and LV end-systolic ($LVID_{es}$) dimensions to risk of congestive heart failure (CHF) in 4905 subjects (2202 men, 2703 women; 148 with prior MI) who were free of CHF and who had echocardiography at a routine exam. LVID was graded as 0 (no dilatation) to 4 (severe dilatation) based on increasing deviation from height- and sex-specific 95th percentile values of LVID in a healthy reference sample. Cox proportional hazards regression (stratified by sex and prior MI status) was used to assess differences in time to CHF among LVID categories after adjusting for age, blood pressure, hypertension treatment, diabetes and valve disease. Separate analyses were performed for $LVID_{ed}$ and $LVID_{es}$. Over an 8-year period, 95 subjects (52 men, 43 women; 75 *without* prior MI) developed CHF. Risk of CHF increased across categories of LVID in both sexes, independent of prior MI status and LV wall thickness.

	LVID category					Trend test p value
	0	1	2	3	4	
	Risk factor-adjusted hazard ratio					
$LVID_{ed}$	1.0	1.72	2.98	5.13	8.85	< 0.0001
$LVID_{es}$	1.0	1.66	2.75	4.56	7.56	< 0.0001

Conclusions: Echocardiographic measures of LV diameter can identify subjects who are at increased risk for CHF. Knowledge of LVID improves the prediction of risk of CHF made from traditional risk factors, perhaps by identifying subjects with subclinical LV dysfunction.

906-51 Are Meta Analysis Methods Valid — Reverse Meta Analysis

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The need for timely yet less costly scientific clinical information has led to the wider use of composite end point trials and meta analysis. To test the validity of these methods, we divided the Studies of Left Ventricular Dysfunction (SOLVD) Prevention Trial into randomly selected blocks, then conducted a meta analysis on the 2 outcome measures repeated 500 times. We then resampled the original population to recreate possible confounding factors such as entry criteria differences [left ventricular ejection fraction (EF)]. Publication bias (Pub bias) was demonstrated by selecting only random blocks with p values < 0.10. Reconstruction by reverse meta analysis (Rev Meta) yielded results identical to the original SOLVD findings. Pub bias converted an insignificant mortality result into a highly significant outcome.

	Death		Death or CHF	
	Odds Ratio	P	Odds Ratio	P
SOLVD	1.038	0.391	1.123	0.002
Rev Meta	1.038	0.394	1.123	0.002
Pub Bias	2.517	0.001	1.395	0.001
EF > 30%	0.992	0.913	0.999	0.986
EF 20–30%	1.05	0.42	1.178	0.002
EF < 20%	1.15	0.31	1.351	0.016

We observed that meta analysis methods accurately reconstructed a fragmented single protocol clinical trial. However, when selective sampling techniques were used to simulate different inclusion criteria and publication bias, the study conclusions were significantly altered. Thus, results of meta analysis should be accepted with caution in clinical decision making or the formulation of practice guidelines.

906-52 Atrial Fibrillation No Longer Increases Mortality in Advanced Heart Failure: A Longitudinal Study of 750 Patients

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Despite potential adverse effects of atrial fibrillation (AF) in heart failure (HF), studies of mortality are conflicting. The impact of AF on survival as therapy for HF has evolved was assessed for 750 consecutive advanced HF patients (LV ejection fraction 0.21 ± 0.07). From 1985–89 (Group I) hydralazine and Class I antiarrhythmics were routinely allowed. From 1990–93 (Group II) amiodarone (Amio) was the preferred antiarrhythmic and angiotensin converting enzyme inhibitors (ACE-I) were first choice vasodilators.

Results: Drug therapy changed over time (Table). Group I vs. Group II AF patients had similar hemodynamic profiles, but 2-year survival was better for group II AF patients (p = 0.001). In group I, AF patients had worse survival (absolute difference 16%) compared to patients without AF (p = 0.002). In group II the mortality difference of 9% for AF vs. no AF patients did not reach significance (p = 0.09).

	Group I		Group II		P
	AF	No AF	AF	No AF	
N	73	286	93	298	
Class I %	33	29	10	7	< 0.0001
Amio %	30	14	71	49	< 0.0001
ACE-I %	39	48	76	80	< 0.0001
2-Year Survival	**0.39**	**0.55**	**0.66**	**0.75**	

Conclusion: With current management of advanced heart failure, AF no longer has a major impact on prognosis.

907 Myocardial Perfusion and Coronary Blood Flow

Monday, March 25, 1996, Noon–2:00 p.m.
Orange County Convention Center, Hall E
Presentation Hour: Noon–1:00 p.m.

907-53 Relative Coronary Flow and Collateral Circulation as Assessed by Tc-99m Sestamibi Scintigraphy Following Selective Right Coronary Artery Injection

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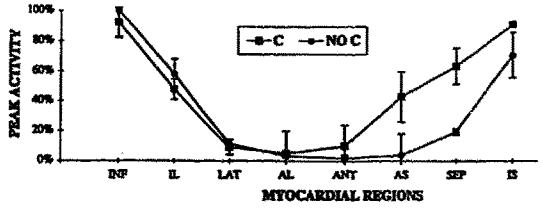
In order to determine the regional blood flow patterns of the right coronary artery, an intracoronary injection of Tc-99m sestamibi (S) was administered to pts with (n = 5) and without (n = 15) angiographic (A) collaterals (C). S activity was quantitated as mean counts per pixel in 8 large regions on three separate short axis slices. Each region was then averaged and expressed as percentage of peak activity. There was significantly greater S activity in the septal ($p < 0.0001$), anteroseptal ($p < 0.003$) and inferoseptal ($p < 0.03$) regions in pts with C as compared to those without C. The graph below represents the percent of peak activity (± 2 SD) in each region based on the presence or absence of C S activity was then correlated with AC; evaluation of scintigraphic C was blinded to the angiographic findings. S distribution correlated with AC in 30/30 regions within the LAD territory. There were no pts with AC without scintigraphic demonstration of C. Alternatively, no S activity was present within the LAD without AC. Thus, S activity precisely correlated with the A distribution of the RCA.



These observations indicate that the extent and distribution of C may be assessed by intracoronary injection of S with the potential added advantage of quantitation of relative blood flow.

907-54 Relation Between Myocardial Blood Flow and Contractile Reserve in Patients With Chronic Coronary Artery Disease and Impaired Left Ventricular Systolic Function

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Reduced myocardial blood flow (MBF) has been proposed as a mechanism for myocardial hibernation in patients with chronic coronary artery disease (CAD). These patients may exhibit a positive inotropic response to dobutamine (Dob) which, in turn, may predict recovery of left ventricular (LV) function after revascularization. However, whether the inotropic reserve is related to MBF in these patients has not been established. To this end, we