

rhythmias with either drug. Side effects were minor with both drugs.

Discussion: The vasoselective calcium antagonist FEL demonstrated equal efficacy in exercise parameters, and was somewhat superior in quality of life parameters, if compared to ENA. The massive vasodilation induced by FEL, as demonstrated by the RPP was not accompanied by an activation of the neurohormonal system, so often observed with other vasodilating agents.

Conclusion: FEL can be seriously considered as an alternative treatment for ACEI in CHF patients. A direct comparison between FEL and ACEI in CHF, with special emphasis on long term efficacy and mortality seems of interest.

	Placebo	Bisoprolol	p
10th perc (ms)	58 ± 18	64 ± 30	NS
25th perc (ms)	95 ± 35	101 ± 35	NS
50th perc (ms)	133 ± 43	152 ± 37	0.02
75th perc (ms)	134 ± 53	171 ± 53	0.004
90th perc (ms)	120 ± 12	139 ± 46	0.05

In conclusion, HRV is not improved at higher heart rates. On the contrary, these results indicate that low dose Bisoprolol improves short term HRV at lower heart rates in CHF.

1031-33

Intravenous Triiodothyronine in Patients with Advanced Heart Failure

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Thyroid hormone metabolism is frequently abnormal in patients with advanced congestive heart failure (CHF), with low triiodothyronine (T3) levels associated with poor hemodynamics and increased mortality. Studies have suggested that intravenous (i.v.) T3 improves hemodynamics acutely in patients immediately post-bypass surgery. To assess the safety of i.v. T3 (which may have unique inotropic mechanisms) in CHF, 22 patients with class III or IV CHF were given an i.v. T3 bolus ± 6 hour infusion (total dose range 0.05 - 1.7 µg/kg) under hemodynamic and ECG monitoring. Basal metabolic rate (BMR) by indirect calorimetry and LVEF by echo were measured at baseline and 2-4 hours post dosing.

Results: No patient had angina or sustained supraventricular or ventricular ectopy and mean heart rate (HR) did not change significantly (94 ± 16 to 98 ± 13 bpm, p = NS), with only 3/22 patients having an increase in HR > 10 bpm. There was no significant change in mean BMR (2221 ± 899 to 2449 ± 682 Kcal/day, p = NS) and only minimal change in mean core temperature (36.8 ± 0.4 to 37.3 ± 0.6°C, p = 0.007), reflecting a peak temperature 38.0-38.5°C in 4 patients. Cardiac output increased by >1.0 L/min in 11/22 patients (>50% increase over baseline in 8/22 patients) with no significant change in LVEF (22 ± 7 to 23 ± 6%, p = NS) or filling pressures.

Conclusion: Acute intravenous T3 administration is well tolerated in patients with advanced CHF and has potential hemodynamic benefit warranting further investigation.

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Value of Ibopamine as Adjunct to Maximal Oral Medication in Patients with Moderately Severe Congestive Heart Failure; a Double-Blind, Placebo-controlled Study

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Multiple drug therapy, including ACE inhibitors, diuretics, vasodilators and digoxin is currently used to reduce signs and symptoms of chronic heart failure (CHF). Optimal treatment of these patients (pts) is a major clinical problem, as the prevalence of CHF increases. Ibopamine, a novel oral dopamine agonist with peripheral vasodilating and neurohumoral inhibiting effects, may have additive value in the treatment of pts with moderately severe CHF, already treated with ACE-inhibitors.

To evaluate the additive value of ibopamine as adjunctive to maximal CHF treatment we studied 60 pts with NYHA class III-IV CHF, who were assigned to treatment with ibopamine (3 dd 100 mg) or placebo in a double-blind, randomized fashion.

We examined the effect of ibopamine on peak oxygen consumption (VO₂), neurohumoral factors and cardiac arrhythmias during 48 hrs ECG monitoring. Neurohumoral parameters were determined at rest and during exercise and included serum norepinephrine, epinephrine, aldosterone and plasma renin activity. All assessments were made at baseline and after 12 weeks of study treatment.

Baseline data: Of the 60 pts, 40 pts (67%) had ischemic heart disease and/or old myocardial infarction, and 20 (33%) non-ischemic heart disease (16 pts (27%) dilated cardiomyopathy). Mean age was 63 ± 10 years, left ventricular ejection fraction 0.23 ± 0.08, peak VO₂ 15.0 ± 2.4 ml/min/kg and 44 of the patients (73%) were male. Background CHF therapy included ACE-inhibitors (100%), diuretics (100%), and digoxin, nitrates, amiodarone when required. At baseline resting serum norepinephrine was 724 ± 78 pg/ml, epinephrine 68 ± 17 pg/ml, aldosterone 0.50 ± 0.08 nmol/l and plasma renin activity 5.7 ± 0.9 ng/ml/hr.

Results: The study was recently completed, the study data are currently analyzed and the results will be presented at the meeting.

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Differential Effect of Bisoprolol on Heart Rate Variability According to Heart Rate in Patients with Heart Failure

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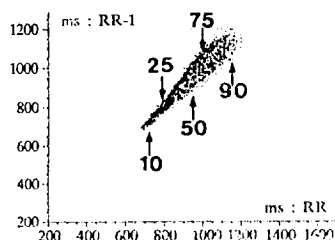
Patients with congestive heart failure (CHF) have reduced heart rate variability (HRV). Beta-blockers (BB) therapy could improve HRV in CHF. However, HRV is influenced by heart rate. The aim of our study was to assess the effect of BB on heart rate adjusted-HRV in 52 patients from the randomized, double-blind, placebo-controlled CIBIS trial (Cardiac Insufficiency Bisoprolol Study). After progressive increase, Bisoprolol was 5 mg once a day. Holter tapes were recorded at baseline and after 2 months of therapy. To assess HRV at given heart rates, we developed a geometrical analysis of scatterplots (SCP). SCP display beat-to-beat HRV by plotting each RR against the preceding RR interval. SCP height, a measure of short term HRV, was measured at the 10th, 25th, 50th, 75th and 90th percentiles of the total RR dispersion (figure). The 10th percentile represents the fastest heart rates, whereas the 90th represents the slowest heart rates. There was no significant difference in baseline SCP measurements. Results of BB therapy on SCP heights are as follows (mean ± SD):

1031-36

Results of Coronary Artery Bypass Grafting in Patients with Chronic Congestive Heart Failure: A Ten-year Experience with 203 Patients

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From 1983 to 1992, 203 patients with preoperative symptoms of chronic CHF and not angina underwent primary CABG for ischemic cardiomyopathy. This represented 3% of all patients undergoing CABG, however, this figure rose to 8% over the last two years of the study. Patients with valvular lesions, left ventricular aneurysms or those with acute post infarction heart failure were excluded. The mean age was 67 years and 63% of the patients were male. 92% of the patients were in NYHA Class III or IV prior to undergoing CABG. The mean preoperative ejection fraction was 34% ± 13% and the mean LVEDP was 20.7 mmHg ± 8.4 mmHg. A LIMA graft was used in 68% of the patients. Follow-up was 98% complete. The hospital mortality was 6.0% and the actuarial survival at 5 years was 59%. An improvement in NYHA class occurred in 75% of the surviving patients with a mean improvement of 1.6 ± 0.6 NYHA classes; 18% of the survivors remained the same and 7% were worse. Univariate analysis identified risk factors for hospital death as emergency operation, recent myocardial infarction (<30 days), the need for IABP and non use of a LIMA graft. Use of the LIMA did predict late survival (p = 0.02), however did not affect NYHA class in the surviving patients. We conclude that CABG is effective in ameliorating symptoms of chronic congestive heart failure in patients suffering from chronic ischemic cardiomyopathy and can be performed with acceptable early and late mortality.



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