ORAL CONTRIBUTIONS

864FO

Featured Oral Session...Percutaneous Interventions: Pharmacologic and Biologic Adjucts

Wednesday, March 10, 2004, 8:30 a.m.-10:00 a.m.
Morial Convention Center, La Louisiane C

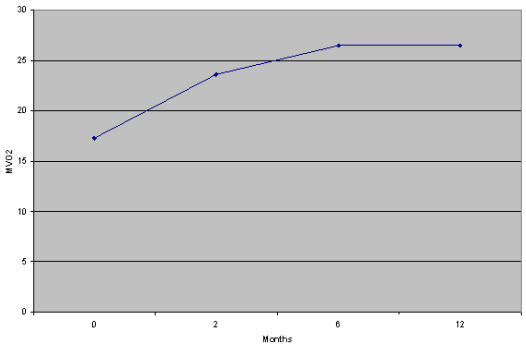
8:45 a.m.

864-2 One-Year Follow-Up of Transendocardial Injection of Autologous Bone Marrow Mononuclear Cells for Ischemic Cardiomyopathy

Emerson C. Perin, Hans F. Dohmann, Radovan Borojevic, Suzana A. Silva, Andre L. Sousa, Guilherme V. Silva, Joao A. Assad, Claudio T. Mesquita, Luciano Belem, Roberto Esporcatte, Fernando O. Rangel, Antonio C. Carvalho, Isabel Rossi, William K. Vaughn, Hans J. Dohmann, James T. Willerson, Texas Heart Institue, Houston, TX, Pro-Cardiaco Hospital, Rio de Janeiro, Brazil

Background: Limited treatment options exist for patients with end-stage ischemic heart failure (HF) not amenable to revascularization. We evaluated the effect of transendocardial (TE) delivery of Autologous Bone Marrow Mononuclear Cells (ABMMC) in patients with severe HF.
Methods: Ten patients (mean age 58 ± 11 yrs) were studied. All patients had LV dysfunction secondary to ischemic cardiomyopathy. Bone marrow (50 ml) was aspirated and ABMMCs were isolated. TE injections were performed using the Myo-star catheter (NOGA, Biosense) to target hibernating myocardium guided electromechanical mapping (EMM). Patients were evaluated by ramp treadmill and Holter monitoring at baseline, 2 months , 6 months and one year. ANOVA was utilized.
Results: Exercise testing showed gradual and continous improvement in METs (p=0.0005) and VO2max (p=0.002) over time . MET's improved from 4.9 at baseline to 6.7 at 2 months to 7.4 at 6 months up to 7.9 at one year follow-up. There was no difference in total number of PVC's over the follow-up period. Ramp treadmill findings of VO2max are presented in figure 1.
Conclusion: In this small number of patients receiving TE injection of ABMMC and followed up to one year there was no evidence of significant arrhythmias and there was sustained improvement in exercise capacity. Future studies are needed to further clarify the role of stem-cell therapy in the treatment of ischemic cardiomyopathy.

Figure 1



9:00 a.m.

864-3 Transendocardial Autologous Bone Marrow Cell Transplantation in Patients With Advanced Ischemic Heart Disease: Final Results From a Multi-center Feasibility Study

Shmuel Fuchs, Ran Kornowski, Giora Weisz, Lowell F. Satler, Peter C. Smits, Petros Okubagzi, Ron Waksman, Neil J. Weissman, Manuel Cerqueira, Alexander Batler, Jeffrey W. Moses, Patrick W. Serruys, Martin B. Leon, Stephen E. Epstein, Washington Hospital Center, Washington, DC

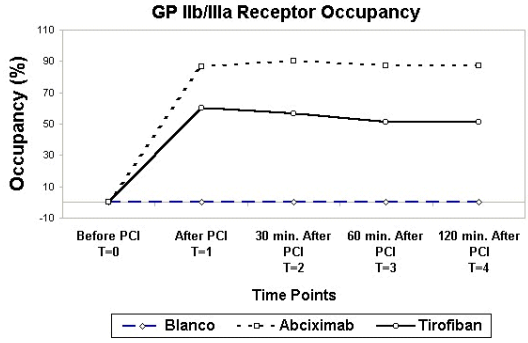
Background—Experimental and initial clinical data suggest that intra-myocardial injection of autologous bone marrow (ABM) may improve myocardial perfusion in pts with obstructive CAD. We therefore conducted a phase I study evaluating the feasibility, safety and potential efficacy of such a strategy in "no-option" patients with refractory angina and myocardial ischemia. **Methods and Results—**Twenty seven pts (58±9 yrs, 22 males, 12 diabetics, 18 with prior MI, 25 post CABG) received evenly distributed 12 transendomyocardial injections (0.2 ml each) of freshly aspirated unfractionated ABM via electromechanical mapping-guided injection catheter. Injected regions encompassed 18.9±6.9% of total endocardial surface area. Pts were injected with $27\pm29 \times 10^6$/ml nucleated cells (lymphocytes 16.7±7.7%, monocytes fraction 3.9±1.2%, CD34+ 2.2±1.4%, CD34+/CD117+ 85.8±12.2% of the total CD34+) directed into pre-defined ischemic myocardium. Procedural success was 100%; mean mapping and injection time was 30±15 and 25±12 min, respectively. ABM injection was associated with no adverse events. One cultured BM was found contaminated but without clinical sequelae. At 3-month follow-up, 4 pts were readmitted for recurrent chest pain. CCS angina score significantly improved (3.2±0.5 vs. 2.0±0.91, P=0.001) as did frequency of angina (23±22 vs. 40±28, P=0.04) and quality of life scores (26±16 vs. 44±28, P=0.03).Serial echocardiography showed no deterioration in segmental or global LV function. Treadmill exercise duration significantly improved (417±136 vs. 488±206 sec, P=0.05). Stress-induced ischemia within the injected territories (113 segments) improved (2.2±0.8 vs. 1.7±1.1, P<0.001). At 1-year, clinical response available in 16 patients was sustained. Complete data will be presented at the time of the meeting. **Conclusions—**This feasibility study provides clinical data indicating safety of catheter-based transendocardial delivery of ABM in patients with advanced symptomatic ischemic heart disease. The results also suggest *potential* efficacy, underscoring the advisability for further evaluation.

9:15 a.m.

864-4 Investigating Platelet Activation With Abciximab and High-Dose Tirofiban in Patients With Acute Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

Jochem W. van Werkum, Wim B M Gerritsen, Hans C. Kelder, Fred JLM Haas, Maarten-Jan Suttorp, Egbert T. Bal, Benno JWM Rensing, Sjef MPG Ernst, Jurriën M. ten Berg, Sint Antonius Hospital, Nieuwegein, The Netherlands

Background
Glycoprotein IIb/IIIa (GP IIb/IIIa) antagonists have shown to reduce thrombotic complications in patients undergoing elective percutaneous coronary intervention (PCI). In patients with acute myocardial infarction (AMI) however, there is only few data on the amount and duration of platelet activation. In addition, new data suggest that the dose of tirofiban used in previous studies was too low. The present study investigated platelet activation in AMI patients undergoing PCI as well as the effects of abciximab and a higher-dose of tirofiban.
Methods
We prospectively randomised 60 AMI patients to abciximab (N=20; bolus 25 mg/kg, than 12-hours 0,125 mg/kg/min), to high-dose tirofiban (N=20; bolus 25 µg/kg, than 18 hours 0,15 µg/kg/min i.v) or to no addition treatment (N=20). Platelet activation (CD62p and CD14 positive platelets) and GP IIb/IIIa receptor occupancy (Biotex GP IIb/IIIa receptor occupancy kit) was measured by flow cytometry at 5 timepoints: before(t=0), immediately after(t=1), 30 min (t=2), 60 min(t=3) and 120 min (t=4) after PCI. Analysis was done by repeated measures using ANOVA.
Results
The number of activated platelets in the treated groups were significantly lower than in the control group (p<0.0001). Abciximab resulted in a significantly higher GP IIb/IIIa receptor-occupancy than high-dose tirofiban (figure, p<0.0001).
conclusion
Despite an increased high-dose regimen, tirofiban leads to significantly lower platelet inhibition than abciximab in AMI patients.



9:30 a.m.

864-5 Effects of Prolonged Oral Simvastatin Treatment After Coronary Stenting on Neointimal Growth and Plaque Progression as Assessed by Intravascular Ultrasound: A Randomized Study

Giovanni Amoroso, Anna Sonia Petronio, Barbara Papini, Andrea Micheli, Ugo Limbruno, Marco De Carlo, Nicola Ciabatti, Mario Mariani, University of Pisa, Pisa, Italy

BACKGROUND: Statins have proven to reduce adverse events, but not in-stent restenosis (ISR) and plaque progression after coronary stenting.
METHODS: 71 normocholesterolemic consecutive patients with stable angina and a single native de-novo lesion suitable for percutaneous intervention, were randomized to simvastatin (S) (20 mg/daily) or placebo (P) 2 weeks before, and continuing for 12 months after successful coronary stenting. Exclusion criteria were: acute coronary syndromes, diabetes, ongoing statin treatment. End-points were binary ISR, neointimal growth, and plaque progression, both at stented and non-stented sites, as assessed by intravascular ultrasound (IVUS), at 12-month follow-up, major cardiovascular events (MACE).