Conclusions: In the described typical population of patients with HCM receiving ICDs: (1) There is a low incidence of appropriate shock therapy during an intermediate follow-up period, occurring in only 1 pt (5%). To date, no pts presenting with syncope or presyncope, without documented prior clinical arrhythmias, have experienced sustained VT at follow-up, suggesting a possible non-arrhythmic mechanism for syncope. (2) In contrast, 29% of pts experienced inappropriate shocks, most often due to SVAs. Careful attention to device programming, or perhaps implantation of dual chamber devices with utilization of detection enhancements, may help reduce inappropriate therapy.

ORAL CONTRIBUTIONS

829 Atrial Fibrillation: Pharmacological Treatment

Monday, March 18, 2002, 2:00 p.m.-3:30 p.m.
Georgia World Congress Center, Room 267W

2:00 p.m.

829-1 The Relation of Magnesium Treatment and Blood Magnesium Levels With Development of Atrial Fibrillation After Coronary Artery Bypass Surgery

Sinan Dagdelen, Fevzi Toraman, Hasan Karabulut, Cem Alhan, *Kosuyolu Heart and Research Hospital, Istanbul, Turkey, Acibadem Hospital, Istanbul, Turkey.*

It is well known that magnesium (Mg) treatment has beneficial effects on both ventricular and atrial arrhythmia. But there is no previous data concerning the relationship between blood Mg cutoff point level and atrial fibrillation (AF) developing after coronary bypass surgery. The aim of our study was to investigate the relationship between blood Mg levels and development of post bypass surgery AF and the effect of Mg treatment on AF. Method: A hundred and forty eight consecutive patients undergoing coronary artery bypass surgery (33F,115M; mean age 62.1±7.0 years) were enrolled to the study as two subgroups. Group A consisted of 93 pts to whom 1.5 g/day MgSO4 infusion were applied the day before surgery, just after operation, and 4 days following surgery, and Group B consisted of 55 control pts. Preoperative and postoperative 12 leads ECG recordings and blood Mg levels were analyzed daily for four days. Results: AF developed in 2 (2%) pts in group A and in 20 (36%) pts in group B ($p<0.001$). Baseline Mg level was similar in two groups. Fourth day Mg level was significantly higher in group A pts (2.21±0.23 vs 1.9±0.14 mg/dl; $p<0.001$). When pts who developed AF and who did not were compared, baseline Mg level was similar. Fourth day Mg level was significantly lower in pts who developed AF after surgery (2.00±0.23 vs 2.15±0.26 mg/dl; $p<0.001$). When the relationship of Mg levels and AF development were investigated with ROC analysis, Mg cutoff point value was found to be 2.37 mg/dl, with very low sensitivity (18%) and specificity(12%). Conclusion: Mg treatment after coronary bypass surgery significantly reduces the risk of AF. The calculated cutoff point value of 2.37 mg/dl for Mg levels to impede AF is not predictive.

2:15 p.m.

829-2 A Prospective and Randomized Study on the Effect of an Angiotensin II Type 1 Receptor Blocker Irbesartan in Maintaining Sinus Rhythm in Patients With Persistent Atrial Fibrillation

Antonio Hernandez-Madrid, Jose G. Rebollo, Anibal Rodriguez, Manuel G. Bueno, Lucas Cano, Jose Manuel Cano, Gonzalo Peña, Gonzalo Peña, Driss Melehi, Detelina Savova, Asuncion Camino, Concepcion Moro, *Ramon y Cajal, Madrid, Spain, Alcala University, Madrid, Spain.*

Background: the tissue angiotensin II has been recently implicated in atrial electrical remodelling, but there is no clinical human study at this point. The main objective of our study was to evaluate the effects of an antagonist of angiotensin II receptors on the acute efficacy of external electrical cardioversion and the early recurrences of atrial fibrillation, during the acute phase of electrical remodelling. to test the hypothesis that the combination of angiotensin II antagonists Irbesartan plus amiodarone is more efficaccious in preventing recurrent atrial fibrillation than amiodarone alone.
Methods: This is an interventional, prospective, randomized and multicenter study on 112 patients with persistent atrial fibrillation. Patients must have had an episode of persistent atrial fibrillation (> 72 hours) and clinical indication of reversion to sinus rhythm. Two groups of patients were compared: Group I (56 patients) was treated with amiodarone and Group II (56 patients) was treated with amiodarone + Irbesartan. There were no clinical or echhocardiographic diferences between both groups. The primary end point was the length of time to a first recurrence of atrial fibrillation.
Results: Pharmacologic conversion occurred in 13 (23%) patients of group I and 18 (32%) of group II ($p<0.05$). Cardioversion (electrical or pharmacological) was effective in 87.5% of patients of group I and 96.5% of patients of group II ($p<0.05$). After 2 months of follow-up, 17 (30%) of the patients assigned to amiodarone and 8 (14%) of those assigned to amiodarone+irbesartan had a recurrence of atrial fibrillation ($p<0.01$).
Conclusion: These results indicate for the first time in humans that the blockade of AT1 receptor with irbesartan may lead to better therapeutic managment of patients with persistent atrial fibrillation. Pretreatment with an angiotensin II receptor antagonist during atrial fibrillation appeared to reduce recurrences, possibly due to a reduction of electrical remodeling.

2:30 p.m.

829-3 Use of Dofetilide in the Treatment of Recurrent Atrial Fibrillation: Limited Efficacy With Prior Drug Failures

Andrea M. Russo, Christa Schorr, Brian Bixby, Henry Hsia, Maureen Nicholas, David Callans, Francis E. Marchlinski, *University of Pennsylvania Health System, Philadelphia, Pennsylvania.*

Background: Dofetilide (DOF) is a class III antiarrhythmic agent (AA) used to reduce recurrences of atrial fibrillation (AF). Because of more recent availability, and regulations regarding distribution, it is frequently used after other AA agents.
Methods: We hypothesized that DOF has limited efficacy for AF following other AA failures. Thirty-two patients (pts) with AF were treated with DOF after failing other AA agents. Dosing was based on creatinine clearance and adjustments based on QT interval.
Results: Mean age was 62 +/- 13 years, LVEF 45 +/- 17%, and 20 were men. Structural heart disease was present in 21 pts. Pts underwent a mean of 2.6 (range 1 to 6) prior AA trials. All pts have been followed for at least 1 month after discharge. Thirteen pts (41%) remained on DOF at last follow-up (67 +/- 89 days). DOF was discontinued after 25 +/- 37 days (range 2 to 164) in 19 pts. Reasons include inefficacy 14 pts (44%), intolerance 3 pts (9%), and unacceptable increase in QT 2 pts (6%). No pts developed ventricular arrhythmias or syncope, and there were no deaths. A comparison was made of apparent drug responders versus those with AF recurrence.
Conclusions: In response to DOF for AF in pts who failed prior AA therapy: 1) DOF is in general well-tolerated; 2) Recurrent AF is common (59%); 3) DOF appears more effective in pts with structural heart disease, with AF diagnosed for a shorter period of time. This suggests a difference in arrhythmic substrate for AF in pts with and without overt heart disease, that may explain the response to DOF.

	Effective(13pts)	Ineffective(14pts)	p-value:
Age	61 +/- 11	57 +/- 15	NS
% males	92%	50%	0.01
# prior AA drugs	1.2	3.9	<0.01
# prior AA drugs failed	1.6	2.9	0.02
# Class III failed	23%	57%	NS
LVEF (%)	40 +/- 15%	56 +/- 13%	<0.01
LA size (cm)	4.6	4.1	NS
% no heart disease	15%	50%	0.02
History CHF	46%	7%	0.03
1st diagnosis AF (mths)	18 +/- 24	60 +/- 38	<0.01
Mean dose (mcg/day)	846	911	NS

2:45 p.m.

829-4 Effects of Oral Flecainide and Amiodarone on Atrial Fibrillatory Frequency in Persistent Human Atrial Fibrillation

Andreas Bollmann, Karl-Heinz Binias, Ines Toepffer, Reiko Steinert, Jochen Molling, Sven Reek, Helmut U. Klein, Christoph Geller, *Department of Cardiology, University Hospital, Magdeburg, Germany.*

Background: Class Ic and III antiarrhythmic drugs are effective in converting recent onset but not persistent atrial fibrillation (AF). The purpose of this study was (1) to investigate the influence of both oral flecainide (flec) and amiodarone (amio) on atrial fibrillatory frequency (f) using spectral analysis of the surface ECG in persistent AF, and (2) to correlate f with drug-induced conversion.
Methods: In 37 pts (23 male, mean age 61 years, LAD 45 mm) with AF lasting longer 24 hours two minute ECG recordings from an orthogonal lead system were analyzed at baseline and after 3 days of antiarrhythmic drug treatment. Flec (n=17, 300 mg loading dose, 200 to 300 mg/d) and amio (n=20, 1200 mg/d loading dose) were given empirically depending on underlying heart disease prior to external electrical cardioversion. Determination of f was performed using a three step algorithm (filtering, QRST averaging and subtraction, discrete Fourier transformation of the fibrillatory baseline).
Results: At baseline mean f measured 6.4 ± 0.5 Hz (range 5.5 to 7.7). Frequency was reduced by antiarrhythmic drugs in all pts by 1.4± 0.8 Hz (range 0.2 to 3.0, $p<.001$ vs baseline) with a greater f decrease following flec (2.2 ± 0.5 Hz) compared to amio (1.0 ± 0.5 Hz, $p<.001$). Drug-related cardioversion was observed in 9/17 (53%) flec pts as opposed to 1/20 (5%) amio pt ($p=.001$). Sensitivity and specificity for predicting flec response were strongly related to f (AUC=.764 using ROC curve analysis). Maximal specificity (87 %) with adequate sensitivity (56 %) was present at a fibrillatory frequency ≥ 6 Hz. There were no other predictors for drug-induced cardioversion.
Conclusions: (1) The antifibrillatory effect of flec and amio may be directly monitored using spectral analysis of the surface ECG. (2) AF is likely be converted with an oral flec bolus when the atrial fibrillatory frequency is below 6 Hz.