study. Three hundred twenty-five patients[277AF/48AF1; 84% male; average age = 67 years; duration of AF/AF1 = 2 weeks–7 months; NYHA: I = 28%, II = 64%, III = 8%] were randomized to 1 of 4 treatment groups:

Dofetilide 125 mcg, 250 mcg, 500 mcg, or placebo BID. The number of patients who achieved NSR after 3 days of oral dosing were as follows: placebo 1/82 (1%), dofetilide 125 mcg 5/74 (6%), dofetilide 250 mcg 8/79 (10.1%), dofetilide 500 mcg 23/71 (32%). Adverse effects were balanced across treatment groups. No torsades nor deaths occurred.

Conclusion: We conclude that orally administered dofetilide at 500 mcg BID is effective and safe in converting chronic atrial fibrillation/flutter to normal sinus rhythm.

10:45

884-2 Intravenous Propafenone Versus Digoxin in Recent Onset Atrial Fibrillation. A Placebo-controlled, Randomized Study

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Background: Intravenous propafenone (Prop) has been shown to effectively restore sinus rhythm in recent onset atrial fibrillation (AF), while the efficacy of iv digoxin (Dig) has been questioned. However, a direct comparison among these drugs and placebo (Plac) is still lacking.

Methods: One hundred twenty three pts with AF lasting <72 hrs were randomized to either iv Prop (2 mg/Kg, 41 pts) or iv Dig (0.5 mg, 40 pts) or Plac (42 pts). After 1 hour, non-converted Prop or Dig pts were switched to the other drug, while non-converted Plac pts were randomized to either iv Prop or Dig and monitored for a further hour.

Results: After the first treatment, 20/41 (49%) Prop pts were cardioverted, versus 13/40 Dig pts (32%) and 6/42 Plac pts (14%). The table reports the relative efficacy (RE) of the drugs calculated by logistic regression analysis. Among the 47 pts resistant to the first treatment who were switched to the alternative drug, Dig was effective in 1/20 pts (5%) and Prop in 13/27 (48%) pts ($p < 0.05$). In the 35 non-converted Plac pts allocated to an active drug, sinus rhythm was obtained in 10/19 pts (53%) by Prop and in 1/16 pts (5%) by Dig ($p < 0.05$). Considering all the 116 pts who received a drug as a first active treatment, conversion rates were 50% (30/60 pts) with Prop and 25% (14/56 pts) with Dig ($p < 0.01$, C.I. 95%1.2–3.4). No significant side effects were observed in any pts.

	RE	C.I. 95%	p
Prop vs Plac	3.41	1.53–7.63	<0.01
Dig vs Plac	2.27	0.96–5.40	NS
Prop vs Dig	1.50	0.97–2.59	NS

Conclusion: In recent onset AF iv propafenone restores sinus rhythm more effectively than either placebo or iv digoxin.

11:00

884-3 Efficacy and Safety of Intravenous Flecainide Compared to Oral Quinidine for Conversion of Acute Atrial Fibrillation (AF) to Sinus Rhythm in Patients Pretreated With Intravenous Metoprolol – The FLEQUIN Trial

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Objectives: We studied the efficacy and safety of i.v. flecainide compared with oral quinidine for the conversion of acute AF after i.v. metoprolol was given to lower ventricular rate.

Background: Effective and safe treatment of acute AF is needed in the emergency room. A delay in conversion to sinus rhythm (SR) prolongs the hospital treatment and increases costs.

Methods: A randomised, double blind comparison between flecainide (2 mg/kg within 30 min.) and quinidine (200 mg up to 3 times 2 hr apart) was performed in 163 patients with acute (<48 hours) AF after metoprolol was given openly.

Results: SR was restored within three hours in 45 (54%) of the 83 patients in the flecainide group and in 24 (30%) of the 80 patients in the quinidine group ($p = 0.0018$). DC cardioversion was needed in 23% and 19% of patients (N.S.), and the median delays to SR were 0.6 hours and 4.1 hours in the flecainide and quinidine groups, respectively ($P < 0.001$). The median hospital stay of patients not needing DC cardioversion and prolonged hospital stay (>48 hr) was 6.4 hr in the flecainide group and 9.4 hr in the quinidine group, ($p = 0.012$). Asymptomatic pauses of 3–9.8 seconds were found in ambulatory ECG recording of 8 patients in the flecainide group and of 7 patients in the quinidine group. Two patients in the flecainide group had a short lasting circulatory collapse.

Conclusions: Flecainide acted more rapidly in restoring SR than quinidine. Both drugs were safe for the treatment of outpatients in the emergency room. I.v. metoprolol was a safe pretreatment for patients treated with either flecainide or quinidine.

11:15

884-4 Acute Atrial Fibrillation: High-Dose IV Amiodarone Facilitates Conversion to Normal Sinus Rhythm. When Is It Necessary?

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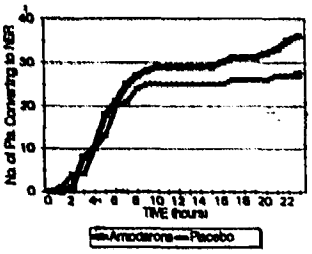
The rate of spontaneous conversion of acute atrial fibrillation (Ac AF) to normal sinus rhythm (NSR) is high and not affected by low dose amiodarone (Am.) treatment. We evaluated high-dose Am. in the treatment of Ac AF.

Methods: Eighty patients (pts.) with paroxysmal AF, admitted for Ac. AF (<48 h) were randomized to receive for 24 hours: (1) Group A, (n = 40): Placebo (2) Group B, (n = 40): Continuous IV Am. 120 mg/hour (total 3 g). Group A pts. not converting to NSR within 24 hr were crossed over to Am therapy. All pts. received Digoxin.

Results: Baseline pulse was 127 ± 19 beats/min. and ± 21 beats/min. in groups A and B. In group A, 27 pts. (67%) converted to NSR vs. 36 (90%) in group B ($p = 0.029$). Twenty-five of 27 (93%) pts. converting spontaneously (in group A) have converted within 12 hours. Eleven pts. (85%) in group B not converting on placebo have converted after being crossed over to high-dose Am. treatment. Finally, 6 pts. (in both groups) did not convert on high-dose Am., 3 converted after electrical cardioversion, but all 6 were in chronic AF after 1 month. In pts. still in AF after 8 hours of treatment, the pulse rate decreased to 114 ± 20 beats/min. in group A vs. 83 ± 15 beats/min. in group B ($p = 0.0014$). No adverse events requiring treatment occurred in group B pts.



Conclusion: IV high-dose Am. treatment (120 mg/hr) is safe and facilitates conversion of Ac AF to NSR. Spontaneous conversion commonly occurs within 12 hours, therefore, high-dose Am. may be reserved for pts. requiring rate control, long term Am. treatment or not converting within 12 hours. Pts resistant to high-dose Am. are at high risk of developing chronic AF.

11:30

884-5 Class III Drugs for Suppression of Recurrent Symptomatic Atrial Fibrillation

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Background: In this comparative trial, we examined the efficacy and safety of amiodarone and sotalol in maintaining normal sinus rhythm in patients (pts) with refractory atrial fibrillation.

Methods: Seventy consecutive pts (39 men, mean age 63.1 ± 9 years) were randomized into two clinically similar groups: 35 received amiodarone and 35 sotalol. Pts with ejection fraction ≤40% or clinically significant heart disease were excluded. The amiodarone dosage began with 800 to 1600 mg/day for 7 to 14 days orally and was then tapered over 7 to 12 days, generally to 200 mg/day. The sotalol dosage was 160–360 mg/day, as tolerated. Follow up clinical evaluations were conducted at 2 month intervals for the first 6 months and at 3 month intervals thereafter. The proportion of pts remaining in sinus rhythm was calculated for the two groups using the Kaplan-Meier method.

Results: Ten of the 35 pts on amiodarone developed atrial fibrillation during the 12-month observation period, compared to 21 of the sotalol group ($p = 0.008$). Progression to atrial fibrillation was faster in the sotalol pts ($p = 0.012$): after 6 months, 77.4% of amiodarone pts remained in normal sinus rhythm compared to 54.3% of the sotalol pts, while at 12 months the respective percentages were 71% and 40%. Sex, age, left atrial size and atrial fibrillation type had no significant effect.

Conclusion: Amiodarone is more effective than sotalol in the prevention of recurrent symptomatic atrial fibrillation, possibly because of the different modes of action of the two drugs.

11:45

884-6 Effect of Chemical vs Electrical Cardioversion of Chronic Atrial Fibrillation on Left Atrial Appendage Function

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Background: Cardioversion (CV) of atrial fibrillation (AF) increases the risk of stroke, presumably due to decreased both left atrial (LAA) and left atrial appendage (LAA) mechanical function. It has been suggested that a component of dysfunction relates to the mode of CV and is less severe in pts undergoing chemical (CCV) than electrical CV (ECV).

Methods: We evaluated the effect of the mode of CV on LAA and LA mechanical function and LA spontaneous contrast (SC) formation in 54 pts with AF >5 weeks duration. All pts were subjected to CCV; those who were treated unsuccessfully were subjected to ECV. All pts were anticoagulated with warfarin for at least 4 weeks and none had atrial thrombus.

Results: CCV (oral loading with Propafenone) was successful in 12 pts (22%), 40 pts underwent ECV with restoration of sinus rhythm and 2 pts were excluded from the study as both CCV and ECV was unsuccessful. LAA emptying (LAA-E) and filling (LAA-F) velocities (Transesophageal echo) were measured pre- and post-CV; SC in the left atrium was visually graded (range 1+–4+). There were no significant differences between the 2 groups for age, gender, left atrial size, EF, NYHA class (</= II), associated cardiopathies and duration of AF.

	CCV (n = 12)			ECV (n = 40)		
	LAA-E (cm/sec)	LAA-F (cm/sec)	SC LAA-E	(cm/sec)	LAA-F (cm/sec)	SC
pre-CV	43 ± 16	47 ± 13	0.9 ± 1	40 ± 18	45 ± 15	1.1 ± 1.2
post-CV	27 ± 8*	34 ± 10*	1.4 ± 1.5*	25 ± 10*	31 ± 16*	1.7 ± 1.4*

* pre vs post-: p < 0.005; *pre vs post-: p < 0.01; CCV vs ECV: p ns

Post CV peak E wave, peak A wave, E/A ratio, VTI A wave, VTI E wave and VTI A wave/Tot VTI were similar for CCV and ECV groups.

Conclusions: CV of chronic AF, whether CCV or ECV, is associated with a significant decrease in LAA mechanical function. In pts with chronic AF of >5 weeks duration, there is no evidence that ECV produces greater post CV left atrial and LAA dysfunction than CCV.

885 Considerations in the Diagnosis and Treatment of Acute Myocardial Infarction

Wednesday, April 1, 1998, 10:30 a.m.–Noon
Georgia World Congress Center, Room 261W

10:30

885-1 The Role of Emergency Room Echocardiography in Triaging Patients With Chest Pain at Intermediate Risk for Acute Myocardial Infarction: A Substudy of CHEER

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Background: The predictive value of a diagnostic test depends on the population being studied. Although 2-D echo has been shown to be useful in identifying patients (pts) with chest pain who subsequently develop myocardial infarction (MI), the role of emergency room (ER) echo in the triage of *intermediate risk* pts is not known.

Methods: Two-D echo was prospectively performed in 178 pts with chest pain at intermediate risk (by the AHCPR guidelines) for acute MI. Echo was performed in the following the enrollment in the CHEER (CHest pain Evaluation in the Emergency Room) study.

Results: Median age was 59 years and 56% were male. ECG was abnormal in 52%, previous MI was present in 17%. Echo showed abnormal wall motion in 71 pts (40%). The initial CK-MB was elevated in 5 pts. During hospitalization, 7 pts (4%) developed acute MI and 6 of them had abnormal wall motion (sensitivity of 86% and positive predictive value 8%) and abnormal ECG. Abnormal wall motion on 2-D echo was univariately associated with acute MI (p < 0.03), but was no longer significant in predicting acute MI after adjusting for ECG and CK-MB.

Conclusion: 1) Intermediate risk pts have a low incidence of MI. 2) Wall motion abnormality is univariately associated with acute MI. 3) However, abnormal echo lacks the incremental value over ECG and enzyme data. 4) Two-D echo in the ER is not clinically useful in pts with chest pain at intermediate risk.

10:45

885-2 Non-culprit Artery Flow Improves Over Time When Flow Improves in the Associated Culprit Artery

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While a great deal of attention has been focused on flow in the infarct related artery in the setting of acute MI, flow in the non-culprit artery has not been studied as extensively. This is in part because flow in the non-culprit artery has been assumed to be normal and used as the "gold standard" in the qualitative assessment of flow in the culprit artery. Using the quantitative Corrected TIMI Frame Count (CTFC) we have recently shown that flow in the non-culprit artery in acute MI is abnormally slowed. The goal of this study was to determine if changes in non-culprit artery flow are correlated with changes in the associated culprit artery flow in acute MI. The cineframes needed for dye to first reach distal landmarks (CTFC) were counted in the TIMI 4, 10A, and 10B trials. In a paired analysis, the flow (CTFC) in non-culprit arteries improved by 8% between 60 minutes and 90 minutes following thrombolysis (34.9 ± 16.7 vs. 32.1 ± 15.6, n = 252, p < 0.00005). When flow improved in the associated culprit artery between 60 minutes and 90 minutes, non-culprit artery flow improved by 13% (36.0 ± 17.7 vs. 31.3 ± 15.7, a change of 4.68 ± 11.1, n = 109, p < 0.00005). When flow did not improve in the associated culprit artery, there was no significant improvement in non-culprit flow between 60 minutes and 90 minutes (33.8 ± 15.4 vs. 33.3 ± 16.0, a change of 0.5 ± 9.2, n = 120, p = 0.56).

Conclusion: Changes in non-culprit artery flow are related to changes in culprit artery flow. Coronary blood flow improvements following thrombolysis appear to be an interrelated global phenomenon rather than being isolated to the culprit artery.

11:00

885-3 Resolution of ST-Segment Elevation 90 Minutes After Thrombolysis for Acute Myocardial Infarction Predicts Outcome: A GUSTO-III Substudy

R.D. Anderson, H.D. White, E.M. Ohman, G.S. Wagner, M.W. Krucoff, P.W. Armstrong, H.P. Iparraguirre, W.W. Weaver, W.B. Gibler, R.M. Califf. *Duke Clinical Research Institute, Durham, NC, USA*

Resolution of ST-segment elevation 180 min after thrombolysis for acute MI predicts acute outcomes, but if a 90-min ECG is also predictive earlier intervention is possible. This substudy enrolled 1783 pts from an international trial of alteplase vs. reteplase treatment within 6 h of MI. ECGs were obtained at baseline, 90, and 180 min after lytics. The sum of the ST-segment resolution at 90 and 180 min was categorized as <30%, 30%–70%, or >70% resolved versus baseline. We compared groups to determine if ST resolution at 90 min was as predictive as at 180 min.

30-day Outcomes

		ST resolution			
	<30%	30–70%	>70%	p	
90 min	ReMI	7.5%	3.0%	2.6%	0.01
	Death	10.6%	6.0%	3.1%0	0.01
180 min	ReMI	8.4%	2.9%	3.4%	0.04
	Death	14.3%	6.5%	3.4%	<0.0001

Conclusion: Persistent ST-segment elevation as early as 90 min after thrombolysis is prognostically important, as is elevation persisting at 3 hours. These data should help identify pts who may benefit from early intervention. Treatment strategies should be developed for pts with continued ST-segment elevation after thrombolysis.

11:15

885-4 Reduction in Intracranial Hemorrhage Associated With Immediate Beta-Blocker Therapy in Patients With Acute Myocardial Infarction Treated With Tissue Plasminogen Activator

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Background: In the setting of an acute myocardial infarction (AMI), immediate beta-blocker therapy reduces the incidence of reinfarction and recurrent chest pain in patients receiving t-PA. Previously published data suggest that such therapy may also reduce the rate of intracranial hemorrhage (ICH).