patients. PVI success and complication rates were similar between SHD and NHP. Conclusions: SHD does not affect outcomes of PVI for treatment of AF; its presence should not preclude ICE/circular mapping guided PVI. ^ p < 0.05

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<th>NHP</th>
<th>SHD</th>
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<td>4.7±0.6</td>
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<td>4.9±0.3*</td>
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<td>Fluoro time, min</td>
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<td>87±20</td>
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POSTER SESSION

1129
Cardioversion and Thrombosis in Atrial Fibrillation
Tuesday, March 09, 2004, 9:00 a.m.-11:00 a.m.
Morial Convention Center, Hall G
Presentation Hour: 10:00 a.m.-11:00 a.m.

1129-209 Incidence of Cerebral Embolism After Cardioversion of Atrial Fibrillation: A Prospective and Serial Study Using Magnetic Resonance Imaging
Harald Schmidt, Peter Bernhard, Christoph Hammerstingl, Stefan Illei, Christina Münßl, Torsten Sommer, Berndt Lüdtertz, Heyder Omeran, University of Bonn, Bonn, Germany
Background: The incidence of clinical apparent cerebral embolism in patients (pts) with atrial fibrillation (AF) who underwent transeosophageal echocardiographic (TEE) guided cardioversion is approximately 1%. The incidence of clinically silent cerebral embolism has not been analysed yet. The aims of this prospective studies were (1) to evaluate the prognosis of cardioversion in pts with AF and (2) to assess the incidence of cerebral embolism with MR-imaging (MRI).
Methods: The study group consisted of 102 pts with AF and TEE guided cardioversion. To document the incidence of cerebral embolism all pts received oral anticoagulation therapy (an INR > 2 was defined as effectively anticoagulated), neurological assessment and cranial MRI including diffusion- weighted imaging within <24h before, <48h and 4 weeks after the procedure.
Results: 76 (70%) pts had sinus rhythm in the 4 weeks follow-up assessment. There were no clinical apparent cerebral embolism. 2 (2%) pts had acute cerebral microembolism in the MRI during the follow-up period. 59 (58%) pts were effectively anticoagulated during the observation period. One patient with acute cerebral lesion in the MRI was not effectively anticoagulated.
Conclusions: The incidence of clinically silent embolism after TEE guided cardioversion in pts with AF under continued effective anticoagulation is low. The findings of this study support the safety of the TEE guided approach to cardioversion in AF patients.

1129-210 Incidence of Cerebral Embolism in High-Risk Patients With Atrial Fibrillation
Harald Schmidt, Peter Bernhard, Christoph Hammerstingl, Matthias Hackenbroch, Torsten Sommer, Berndt Lüdtertz, Heyder Omeran, University of Bonn, Bonn, Germany
Background: Patients (pts) with atrial fibrillation (AF) and spontaneous echo contrast (SEC) have an increased stroke risk. The aims of this prospective study were (1) to evaluate the prognosis of pts with dense SEC and (2) to assess the incidence of cerebral embolism with SEC and AF on warfarin. Methods: The study group consisted of 64 pts with SEC and AF. 28 pts served as controls. All pts received oral anticoagulation therapy during the follow-up period (an INR > 2 was defined as effectively anticoagulated). To document the incidence of cerebral embolism all pts underwent the following examinations at admission and at 1, 3 and 12 months: transcranial and transeosophageal echocardiography, cranial MRI including diffusion- weighted MRI, assessment of the anticoagulation level and neurological assessment.
Results: 2 pts had clinically silent cerebral embolism at the index examination. Two patients (3%) had cerebral embolism with neurological deficit during the follow-up period. Four (6%) pts died during the observation period due to stroke. Additionally, 6 (9%) pts had new appeared focal diffusion abnormalities in the MRI during the follow-up. 45 (70%) pts were effectively anticoagulated, 15 (23%) pts were anticoagulated inadequately during the 12 months. Pts with cerebral embolism had lower left atrial appendage peak velocities (0.22 ± 0.14 vs. 0.38 ± 0.21; p<0.01) and denser SEC (2.6 ± 1.1 vs. 1.6 ± 1.6; p<0.01) than pts without cerebral events. Conclusions: Pts with AF and SEC have an increased risk of cerebral embolism despite oral anticoagulation therapy. Low peak velocity of the left atrial appendage and dense SEC are echocardiographic predictors for a cerebral event.

1129-211 Endothelial, Coagulation, and Platelet Function in Atrial Fibrillation: Effect of Direct Current Cardioversion
Fraser Witherow, Neil Grubb, Christopher Ludlam, Keith A. Fox, Andrew D. Flapan, Cardiovascular Research, Edinburgh, United Kingdom
Background: Atrial fibrillation (AF) is the most common human arrhythmia with a prevalence in the elderly population of up to 15%. It results in breathlessness, palpitations and systemic embolisation due to a procoagulant state. Recent studies of AF have suggested that rate control with anticoagulation may have a superior outcome compared to rhythm control. The aim of this study was to assess the effect of D.C. cardioversion on markers of coagulation and platelet activity and endothelial function in patients with AF on warfarin therapy.
Methods: Sixty patients undergoing elective D.C. cardioversion for non-valvular atrial fibrillation were recruited to the study. All patients were taking warfarin aiming for an INR of 2-3. D.C. cardioversion was performed under general anaesthetic following our local protocol. Peripheral venous blood was sampled through a 16G needle prior to cardioversion and at 2, 4, 6 and 10 weeks post cardioversion. Blood samples were taken in sinus rhythm (SR). Warfarin was discontinued 6 weeks after cardioversion. The samples were assayed for INR, prothrombin fragment 1+2, d-dimer, beta thromboglobulin, and von Willebrand factor.
Results: Nine patients failed to cardiovert to sinus rhythm, and 8 people withdrew from the study. Median age was 65 (39-77) years. Mean INR was 2.4±0.3. At 2 weeks, 2 patients remained in SR and 23 had reverted to AF. Compared to baseline, D.C. cardioversion produced no significant change in prothrombin fragment 1+2 (p>0.5), von Willebrand factor (p>0.5). No significant change in coagulation or platelet activity was seen at 4 weeks (n=15) or 6 weeks (n=18), compared to baseline. At 10 weeks, only prothrombin fragment 1+2 levels were higher than at baseline (p<0.009).

1129-212 Cardiacversion for Chronic Atrial Fibrillation Is Associated With An Immediate Drop in Brain Natriuretic Peptide
Craig S. Vinch, Jason Raschkin, Girish Logsetty, Dennis A. Tigue, Jeffrey C. Hill, Theo E. Meyer, Lawrence S. Rosenthal, Gerard P. Aurigemma, University of Massachusetts Medical School, Worcester, MA, Brigham & Women’s Hospital, Boston, MA
Background: Atrial fibrillation (AF) is often associated with heart failure (HF) symptoms, even in patients with normal ejection fraction (EF). Since brain natriuretic peptide (BNP) levels are elevated in HF, we hypothesized that BNP elevations in pts with AF would correlate with HF symptoms, but would not fall immediately following cardioversion (CV), since atrial mechanical function would not yet be restored. Accordingly, we studied BNP in pts pre- and post CV, controlling for possible effects of conscious sedation (IVCS).
Methods: We enrolled 50 consecutive pts (39 male, 11 female, age 62±14) undergoing CV with mean EF 54% ± 12; 38 pts had EF <50%; 17 consecutive pts (12 male, age 61 ± 16 years) receiving IVCS for non-AF related TEE served as controls. Summary/Conclusions: BNP (1) is elevated in chronic AF, despite normal EF and (2) correlates with number of HF symptoms, likely reflecting elevated filling pressures and/or neurohumoral activation; surprisingly (3) BNP falls in most pts immediately following CV, but this fall (4) does not appear to be due to IVCS. Given the rapidity of the fall in BNP, we speculate that CV-associated drop in BNP likely reflects the salutary effects of rhythm uniformity rather than reestablishment of atrial kick.
Conclusion. Achieving rhythm control with D.C. cardioversion does not improve coagulation or platelet markers in patients with AF. This study may in part explain why rate control with anticoagulation seems superior to rhythm control in patients with AF.

**T129-215**

Which Patients With Atrial Fibrillation or Atrial Flutter Benefit From Electrical Cardioversion?

Ahmad A. Elsebier, A. Gabriela Rosales, Joseph Maalouf, Nasser Ammash, David Hodge, Stephen C. Hammill, Paul A. Friedman, Mayo Clinic, Rochester, MN

Background: Optimal management of new onset atrial fibrillation (AFib) or flutter (Aflu) is not known. We sought to determine the recurrence rate of atrial arrhythmia post electrical cardioversion (DCCV) of new onset AFib and Aflu.

Methods: A cohort of 244 patients (pts) with documented AFib (119 with new onset AFib) and 79 pts with Aflu (52 with new onset Aflu) were followed after DCCV for recurrence. Post-surgical pts with Aflu or Aflu were excluded. Cox proportional hazards models were used to construct univariate models.

Results: The mean age was 71±12.4 years with 69% being males. 30% had coronary artery disease, 19% had congestive heart failure and 68% had hypertension. The mean follow up was 159±171.2 days. Pts with recurrent AFib (57.6%) or recurrent Aflu (63%) were more likely to be on antiarrhythmic medications than pts with new onset AFib (19.3%) or new onset Aflu (3.9%). p<0.05. In a multivariate model, pts with a bigger right atrial size (p<0.02) or mitral valve disease (p<0.01) were more likely to have recurrence of atrial arrhythmia. Use of antiarrhythmic medications had no effect on recurrence. Pts with new onset Aflu were less likely to recur after DCCV than pts with new onset AFib or either recurrent AFib or Aflu, p<0.001 (see figure).

Conclusion: DCCV for pts with new onset Aflu is a reasonable strategy with 65% of pts maintaining sinus rhythm at 1.5 years of follow-up. Only 20% of pts with AFib or recurrent Aflu remained in sinus rhythm at 1.5 years of follow-up.

**T129-216**

Atrial Fibrillation and Heart Failure: Preserved Systolic Function Does Not Predict a Benign Prognosis

Ratika Parkash, F. Michael Toca, William H. Maisel, William G. Stevenson, Brigham and Women’s Hospital, Boston, MA

Background: The prognostic significance of preserved systolic function in heart failure (HF) and atrial fibrillation (AF) is controversial.

Methods: To determine the impact of ventricular function (EF) on mortality associated with atrial fibrillation, heart failure (HF) and atrial flutter (Aflu) is controversial. Methods: To determine the impact of ventricular function (EF) on mortality associated with atrial fibrillation (AF), heart failure (HF) and atrial flutter (Aflu) is controversial.

Results: A total of 1759 patients met entry criteria (mean age 73±12 yrs, 44% women). EF was preserved (>50%) in 42%. No difference in median survival was found amongst patients with an EF >50% (3.30 yrs, 95% CI (2.70, 3.79)) compared to those with an EF <50% (3.19 yrs, 95% CI (2.73, 3.76)) (p=0.70), even after adjustment for age, gender, creatinine (Cr) and QRS duration. In multivariable analysis older age, male gender and increased Cr were predictive of increased mortality.

Conclusion: Patients with atrial fibrillation, heart failure and preserved EF have similar increased Cr were predictive of increased mortality.

**T129-217**


Lana Booth, George Bordoli, Andrew Mitchell, Nikhil Patel, Neil Sulke, Eastbourne General Hospital, Eastbourne, United Kingdom

Background: Current guidelines recommend a step-up energy protocol for the cardioversion of atrial fibrillation. The aim of this study was to compare such a protocol with a protocol involving an initial high energy shock.

Methods: This prospective single-blinded study enrolled 261 consecutive patients (mean age 71±10 years, 62% male) referred for electrophysiological ablation for persistent atrial fibrillation (AF). Patients were randomised to either protocol A: (1) 200J anteroposterior (AA), (2) 360J AA, (3) 360J anteroposterior (AP) or protocol B: (1) 360J AA (2) 360J AP and (3) 360J posteroposterior (PA).

All procedures were performed under deep sedation with intravenous dazepam.

Results: Both procedures resulted in similar success rates after the maximum of 3 shocks (A 82%, B 87%, p=0.3), however there was a highly significant increase in 1st shock success for protocol B, 68%, versus 41% for protocol A, p=0.0001. Protocol B resulted in significantly fewer shocks to achieve sinus rhythm as compared to protocol A (1.3 ± 0.6 versus 1.6 ± 0.7, p=0.002). There were no differences in cumulative energy used (group A, 473 ± 286J, versus group B, 436 ± 273J, p=0.24) or sedation requirements (group A, 22 ± 9 mg, group B, 22 ± 9 mg, p=0.7).

Conclusion: High initial energy cardioversion for atrial fibrillation increased 1st shock success and decreased shock frequency but resulted in similar overall conversion rates, cumulative energy and use of sedation compared with conventional step-up protocol. Reversal of polarity should be considered in patients who fail initial shocks.

**T129-218**

How Does Age Influence the Prescribing of Antithrombotic Therapy for Ambulatory Patients With Permanent Atrial Fibrillation?

Alain Leizorovicz, Maxime Guenoun, Jean Yves Le Heuzey, Claude Jeandel, Patrick Mismetti, Ariel Cohen, The FALSTAF Study Group, School of Medicine Laennec, Lyon, France

Background: Prescription of antithrombotics in Atrial fibrillation (AF) patients (pts) and its determinants in elderly patients are not well known. We undertook a survey in ambulatory AF patients in France.

Methods: We prospectively surveyed consecutive outpatient patients with permanent AF with or without valvular disease, excluding those with valvular prostheses. Cardiologists or general practitioners were selected at random.

Results: 5893 pts were included by 188 cardiologists (2367 pts) and 582 general practitioners (3526 pts). Their mean age was 75.8 years, 58% were men, 31.7% had Valvular disease.

Overall, 95.5% of pts were being prescribed an antithrombotic drug, including vitamin K antagonists (VKA) in 76.4% of pts and aspirin in 16.6%.

Higher age was a strong predictive factor for lower prescribing of antithrombotic therapy, even after multivariate adjustment for other factors with a significant negative influence on prescribing, such as poor autonomy, history of severe hemorrhage and potentiality hemodynamic diseases.

Above 80 years, 7.4% of pts were not receiving antithrombotic prophylaxis. Among pts receiving an antithrombotic therapy, the use of VKA decreased sharply after 75 years in favor of aspirin (figure).

Conclusions: In our study, a majority of ambulatory patients with permanent AF were