SEDATION WITH MIDAZOLAM FOR EXTERNAL DIRECT CURRENT CARDIOVERSION FOR ATRIAL FIBRILLATION WITH AN ANAESTHETIST IN THE PRESENCE OF AN ANAESTHETIST

**Background:**
Electrical external cardioversion (ECC) is commonly employed in the Electrophysiological Laboratory (EP) to restore sinus rhythm. An Anaesthetist is usually present to assure a general anaesthesia. It is often difficult to obtain the availability of the Anaesthetist during long procedures, such as in atrial fibrillation ablation, when more than one cardioversion is required. We describe our experience for sedation with midazolam for the external cardioversion in absence of an Anaesthetist.

**Methods:**
During last 15 months we performed 185 ECC (73 during electrophysiological studies) without anaesthesiology supervision. We excluded patients with serious bronchopulmonary diseases. Midazolam was administered intravenously (4 to 25 mg, mean 10.5 mg). Each patient received high flow oxygen before and after the procedure. Pulse oximetry and cardiac rhythm were monitored during the procedures and subsequent 3 hours.

**Results:**
Midazolam was effective to obtain adequate sedation in all patients. All patients had amnesia in regard to the procedure. No patient required intubation or other emergency manoeuvres.

**Conclusions:**
Sedation with Midazolam for ECC is safe, efficacious and allows for a shorter procedure time in EP laboratory.

**[18.2 SEDATION WITH MIDAZOLAM FOR EXTERNAL CARDIOVERSION](#)**

**[18.3 THE INFLUENCE OF BODY WEIGHT ON THE INITIAL ENERGY OF BIPHASIC TRANSISTHRANSTHELAR ELECTRICAL CARDIOVERSION](#)**

**Method:**
We compared 2 groups of pts with chronic AF (3 – 12 months), LA size 4.0 to 5.5 cm, anamnesis of AF at least 3 years, mean age 61.4 years.

Group I: 128 pts who used amiodarone (AMIO) 200mg bid and angiotensin-converting enzyme inhibitors (ACEi); group II used just AMIO in a similar pattern. Both groups just before ECC had IV 600 mg AMIO. The same was repeated also after ECC. We compared the data: rate of AF relapses after ECC during the first hour and 24 hours, and 7 days, and 3, 6 and 12 months.

We compared the effectiveness in groups where AF was shorter or longer than 6 months.

**Results:**
Gr. I had a lesser number of early relapses (first hour 7.6% vs 14.9%), during 24 hours 8.8% vs 18.5%; p<0.001. Number of relapses in distant period of time continued to increase: gr. II after 30 days 15.4% vs 28.6%, and in 6 month follow up persistent SR was in gr. I 73.4% vs 56.4%; p=0.02. Number of relapses was greater for patients with AF longer 6 months in both groups, but more in group II.

**Conclusions:**
Duration of AF has an essential influence on the effect of cardioversion, ACEi, when combined with AMIO, significantly improved the results of ECC and makes maintenance of SR more effective in distant period. Usage of AMIO pre and post EVC helps to avoid early relapses.

**[18.4 CLINICAL APPLICATION OF LOW-ENERGY TRANSPOSEAL CARDIOVERSION OF ATRIAL FIBRILLATION AND FLUTTER](#)**

W. Mojkowski, W. Pawłowskas-Jenerowicz, W. Dreajniak, T. Saniewski, M. Dabrowski, Medical Research Center; Cardiac Unit at Bialelski Hospital, Warsaw, Poland

**Study group:**
24 consecutive patients (12 F), age 51 – 88 yrs (mean 66,8) with paroxysmal (80%) or persistent atrial fibrillation and flutter. A special electrode was inserted in esophagus in a depth of 30 – 35cm using ECG control. An external electrode was placed in V1 position. Pts were sedated with fentanyl and midazolam. The 1 – 3 DC shocks of energy 5 – 30J were performed using biphase Zoll M-Series defibrillator.

**Results:**
Transpososephageal cardioversion (TEC) was successful in 21 (87,5%) pts. A total amount of energy for patient was 5–65J (mean 21,36J), mean value of last impulse 14,5J. In 11 pts sinus rhythm restored with single shock of 5–20J (mean 10J). 8 pts required 2 shocks of total energy 15–50J (mean 22,5J). In 3 pts 3 shocks were applied of total energy 40 – 65 (mean 52,5J).

**Conclusions:**
TEC is very successful in pts with atrial arrhythmias to restore sinus rhythm with the use of less energy. Further studies are needed to determine optimal energy of the first shock, and lowest energy dose. The procedure is well tolerated despite lack of general anesthesia.

**[18.5 DIRECT CURRENT CARDIOVERSION FOR ATRIAL ARRHYTHMIAS IN ADULTS WITH CONGENITAL HEART DISEASE: MANAGEMENT STRATEGY AND OUTCOME FOR 63 PATIENTS](#)**

N.M. Ammass, S.D. Phillips, H.M. Connolly, M.A. Grogan, P.A. Friedman, C.A. Barnes. Mayo Clinic Rochester; Minnesota, USA

**Objectives:**
We sought to evaluate safety, efficacy, and outcome of direct current cardioversion (DCCV) for atrial arrhythmias in adults with congenital heart disease.

**Background:**
Increasingly, atrial arrhythmias are noted in adults with congenital heart disease. The outcome of DCCV for atrial arrhythmias in this population is unknown.

**Methods:**
Our study was a retrospective review of patients 18 years or older with congenital heart disease who underwent DCCV between June 2000 and July 2003. Patient characteristics reviewed included the specific cardiac diagnosis and arrhythmia history. A subset of patients had transpososephageal echocardiography (TEE) before DCCV; this subset was reviewed to evaluate spontaneous echo contrast. The outcome data evaluated included success of DCCV, complications, recurrence of arrhythmia, antiarrhythmic medication use, electrophysiology or pacemaker procedure in follow-up, and all-cause mortality.

**Results:**
Sixty-three patients underwent 80 DCCVs, 59 of which were TEE-guided. DCCV was successful in 94%. Mean follow-up was 387 days. No thromboembolic events were noted. Twenty-five patients (40%) remained in sinus rhythm throughout follow-up. Recurrent arrhythmia was predicted by spontaneous echo contrast in the left atrium or a history of atrial fibrillation.

**Conclusions:**
DCCV with appropriate anticoagulation is safe for patients with congenital heart disease, even in the presence of an intracardiac shunt and spontaneous contrast on TEE. The immediate success of cardioversion is excellent. Spontaneous echo contrast does not predict thromboembolic events. Recurrent arrhythmias are a problem in this patient population, prompting antiarrhythmic medication use or electrophysiologic procedures (or both).

**[18.6 EFFECTS OF A HIGH DOSE INTRAVENOUS BOLUS AMIODARONE IN PATIENTS WITH ATRIAL FIBRILLATION AND A RAPID VENTRICULAR RATE](#)**

R. Hofmann, C. Steinwender, J. Kammler, A. Kypia, F. Leisch. City Hospital Linz, Cardiovascular Division, Linz, Austria

**Background:**
Amiodarone, given as intravenous bolus has not yet been studied in patients with atrial fibrillation and a high ventricular rate.

**Methods:**
One hundred consecutive patients with atrial fibrillation and a ventricular rate above 135 bpm were randomized to receive either 450 mg amiodarone or 0.6 mg digoxin given as a single bolus through a peripheral venous access. If the ventricular rate exceeded 100 bpm after 30 minutes, another 300 mg amiodarone or 0.4 mg digoxin were added.

**Primary endpoints of the study were the ventricular rate and the occurrence of sinus rhythm after 30 and 60 minutes. Secondary endpoints were blood pressure...**