Benefit Of Ablation Of First Diagnosed Atrial Fibrillation In Patients Submitted To Coronary Artery Bypass Grafting

A. Strelnikov, S. Bayramova, D. Losik, E. Pokushalov, A. Romanov, A. Chernyavskiy, A. Karaskov

Arrhythmia Department, Novosibirsk State Research Institute of Circulation Pathology, Novosibirsk, Russia

Abstract

Introduction: In patients with long-term history of paroxysmal atrial fibrillation (AF) a decision can be made to go for concomitant coronary artery bypass grafting (CABG) and epicardial AF ablation procedures. Whether patients with recent onset of PAF might benefit of epicardial AF ablation concomitant to CABG is not known. Aim of this prospective, randomized, single-center pilot study is the comparison of patients with first diagnosed AF submitted to CABG and treated with and without epicardial pulmonary vein isolation (PVI).

Methods: Patients with first diagnosed paroxysmal AF and indication for CABG were enrolled in this prospective randomized pilot study. The primary endpoint was AF free survival (AF burden <0.5%) between two groups at 18 months follow up. The secondary end-points were: the percentage of AF burden defined through continuous monitoring using an implantable loop recorder, thromboembolic events and procedural complications. All patients were implanted with a subcutaneous cardiac monitor to track the cardiac rhythm and measure the AF burden.

Results: This study enrolled 43 patients (mean age 59±7 years, 74% males), followed up for 18 months after CABG. The patients were randomly allocated to two groups, CABG alone (n=21) and CABG with concomitant PVI (n=22). At the 18 - month follow-up after surgery, 19 (86%) patients in the CABG+PVI group were AF-free (i.e. AF%<0.5%) vs 9 (43%) in the CABG only group (Log-Rank test, p=0.007). At the end of follow-up, the mean AF burden in the CABG and CABG+PVI group was 7.8±5.1% and 1.6±1.8%, respectively (P<0.001). Four (26%) of the 15 patients with AF recurrences were completely asymptomatic.

Conclusion: Patients with recent-onset atrial fibrillation submitted to CABG may benefit of concomitant ablation of the arrhythmia for preventing recurrences.
The Hybrid Approach For The Treatment Of Atrial Fibrillation In PTS With Giant Left Atriums And Ischemic Or Valvular Cardiomyopathy: Safe And Efficacious

S. Gundry, W. Ehrman, H. Bhatka

The International Heart and Lung Institute, Departments of Surgery and Cardiology, Desert Regional Medical Center, Palm Springs, CA, USA

Abstract

Introduction: We studied whether a combined surgical radiofrequency LA box lesion set, performed prior to cardiopulmonary bypass, coupled with post-operative EP study and additional catheter based lesion sets, would be safe and efficacious in high-risk surgical pts with AF, cardiomyopathy, and giant LA’s. AF ablation is deemed too risky in these pts, but restoration of NSR may be critical to short and long-term survival. Epicardial Ablation pre-bypass, followed by catheter ablation post op (Hybrid Approach), would eliminate the additional ischemia and bypass time, yet restore NSR if effective.

Methods: Twelve (12) pts, aged 58-84, with EF’s </=30% (range 10-30%), with LA size 6.5-8.5 cm by TEE, have been studied. All pts underwent revascularization with 3-5 CABG’s/pt.; 10/12 (83%) had concomitant MV repair and TV repair; two/12 (16%) had AV replacement as well. All pts had PV isolation by a LA box lesion created epicardially using the Estech (San Ramon, CA) Cobra Adhere XL or the Fusion Varipolar Devices pre bypass. All pts had exit and entrance block. All left the OR in either NSR, or atrial paced or DDD paced rhythms.

Results: Ten/12 pts (83%) developed AF or Aflutter post-op. Four/10 (40%) were studied acutely and found to have RA flutter, which was ablated. One/11 required a second intervention for a left sided RA. Six/10 (60%) either converted or were cardioverted. Four/12 (33%) required permanent pacemaker implant for bradycardia. There were no deaths. At followup, 2/12 (16%) have persistent A Flutter with rate control.

Conclusions: We conclude that the Hybrid approach to the treatment of AF in pts with giant LA’s and cardiomyopathy using an Epicardial LA Box lesion set, performed off pump with Bipolar and Unipolar Radiofrequency Ablation prior to cardiac surgery, is safe and efficacious in these high risk pts; restoring sinus rhythm in 84% at up to 2 year followup.
Cardiac Resynchronization Therapy. Surgically Implanted Epicardial Left Ventricular Lead Compared With Coronary Sinus Lead Stimulation


Department of Cardiac Electrophysiology. University Hospital Favaloro Foundation Ciudad Autónoma de Buenos Aires, Argentina

Abstract

Introduction: Epicardial left ventricle lead (ELVL) is an alternative when a coronary sinus lead (CSL) implantation failed. The aim of the study was to assess the outcome of both approaches.

Methods: A prospective analysis was performed in 97 pts with idiopathic dilated or ischemic cardiomyopathy who fulfilled CRT-D indications. Group A: 22 pts underwent surgical implantation of ELVL. Group B: 75 pts received CSL implantation. Mean follow up: 21 months (2-69).

Pts were considered responders if there was a LVEF improvement ≥5% and/or a reduction of ≥1 NYHA functional class. Responder rate, mean LVEF improvement and end diastolic left ventricle diameter (EDLVD) were assessed.

Results: Baseline characteristics were similar in both groups. Responder rate was 86% vs 70.6% (ns), mean LVEF improvement was 11.5±10% vs 10.7±10% (ns) and EDLVD reduction was 11±13% vs 5.6±12.8% (ns) among group A and B respectively.

Conclusions: In our study population ELVL implantation was an effective approach in performing an appropriate CRT. The rate of responders was high and there was no significant difference in terms of LVEF improvement and EDLVD reduction.
Long-Term Results After Cardiac Resynchronization Therapy With Or Without Surgical Revascularization In Patients With Ischemic Heart Failure And Left Ventricle Dyssynchrony


Arrhythmia Department and EP Laboratory, State Research Institute of Circulation Pathology, Novosibirsk, Russia

Abstract

Introduction: We have tested the hypothesis whether epicardial cardiac resynchronization therapy (CRT) concomitantly with surgical revascularization is superior to CRT and medical therapy in patients with ischemic heart failure, LVEF<35% and LV dyssynchrony, who were eligible to coronary artery bypass grafting or medical therapy.

Methods: A Ninety seven consecutive patients with severe ischemic heart failure were randomly assigned to endocardial CRT implantation plus medical therapy (n=48) or epicardial CRT implantation plus CABG (n=49). The primary end point was reduction in left ventricle systolic volume (LVESV) by 15% measured by echocardiography. The major secondary endpoint included the all cause death. The patients were followed up during 24 months.

Results: At 24 months, the mean LVESV was significantly lower in epicardial CRT plus CABG group compared with CRT plus medical therapy group (115.4±22.4.% vs. 137.8±19.7%, P=0.002). In epicardial CRT plus CABG group 6 patients (12.2%) died at 2-year follow compared with 11 (22.9%) in CRT plus medical therapy group (Log-Rank test, p=0.02). Totally, the number of patients with LVESV reduction by 15% were 37 (86%) in epicardial CRT plus CABG group and 25 (67.6%) in CRT plus medical therapy group (p=0.034).

Conclusions: In ischemic heart failure patients with LV dyssynchrony, who are eligible to surgical revascularization or medical therapy, epicardial implantation of a CRT system concomitantly with CABG is superior to CRT plus medical therapy in terms of cardiac reverse remodeling and is associated with low mortality in long-term follow up.
Short Term Results Of Original Approach For Permanent Endocardial Lead Extraction

A. Ponomarev, V. Korshunov, A. Dodonov

Arrhythmology department of State Healthcare Institution Rostov Regional Clinical Hospital, Rostov-on-Don, Russia

Abstract

Introduction: The most difficult point of endocardial lead extraction (LE) problem is connected with large lead-assotiated vegetations. Our group developed a pump-off approach to LE which allows to avoid damage of targeted leads and prevent pulmonary artery embolization.

Methods: The surgical approach includes sternotomy, canulation of aorta, SCV, ICV. The procedure is performed using assisted circulation and beating heart technique. After RA incision targeted leads are cut off and central parts of them are extracted. A special tool and visual control are used at this stage of operation. Peripheral parts of leads are extracted together with CIED through pocket incision. Our experience includes 18 cases. In addition TV prosthesis was performed in 11 cases, TV+MV prosthesis – in 5 cases and CABG – in 4 cases.

Results: AComplete procedural success was achieved in 17 cases (94.4%, 51 leads extracted). Clinical procedural success was achieved in 1 case (5.6%, lead part 10 cm long was abandoned). No hospital mortality or after-surgical complications were observed.

Conclusions: The method has high clinical efficacy. Its reproducibility allows to use it widely in all cardiosurgery departments.
A Comparison Of Esmolol And Dexmedetomidine For Attenuation Of Haemodynamic Responses In Patients Undergoing Elective Off-Pump Coronary Artery Bypass Grafting


Instituto Mexicano del Seguro Social, Departamento de Cirugía Cardiotorácica y Anestesia Cardiovascular de la Unidad Médica de Alta Especialidad, Hospital General 'Dr. Gaudencio González Garza' del Centro Médico Nacional 'La Raza' UNAM, Facultad de Medicina, Mexico City, Mexico

Abstract

Introduction: Our aim was to compare effectiveness of esmolol and dexmedetomidine in the treatment of increased hemodynamic response during off-pump coronary artery bypass grafting. (OPCAB)

Methods: Twenty adult patients undergoing elective OPCAB were recruited for this prospective study. Inclusion criteria were elective OPCAB and age 18–75 years. Patients were excluded preoperatively if they gave a history of severely impaired cardiac function, ejection fraction less than 30%, history suggestive of sensitivity to drugs used during the study. Those requiring emergency surgery were also excluded. Receiving standardized etomidate– vecuronium- fentanyl-based anaesthesia. Randomly received infusions of esmolol 0.5 mg /kg/1 min (Group E, n=10) or Dexmedetomidine 0.5 mcg/kg/hr.(Group DEX, n=10). The infusion was started after sternotomy. The goal was to maintain bradycardia (≥50 bpm) and mean arterial pressure (MAP) ≤60-75mmHg.

Results: After drug, HR reductions were significant during the intraoperative period in group Dexmedetomidine. Hemodynamic Variables: HR, MAP, Svo2 .70% and a serum lactate concentration ≤2.0 mmol/L, time of surgery and narcotic consumption, values of the two groups during the study. In the DEX group (HR) was significantly lower than the baseline in all measurement times.

Conclusions: Although esmolol and dexmedetomidine attenuated hemodynamic response during coronary artery bypass grafting period, dexmedetomidine was more effective in hemodynamic stabilization.