Conclusions: RF ablation for VT occurring in pts with SHD without ICD appears safe and efficient and might be now proposed as an alternative for ICD implantation because of associated morbidity, advanced age or when VT is well tolerated and does not occur in the context of advanced heart disease.

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Safety of transvenous pulmonary vein isolation for the treatment of atrial fibrillation: a prospective randomized study comparing radiofrequency energy with cryoenergy

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Background: New transvenous devices using cryoenergy have been recently introduced to perform pulmonary vein isolation (PVI) for the treatment of atrial fibrillation (AF). Experimental data suggested that cryoenergy (CRYO) produced less endothelial disruption and platelet activation than radiofrequency energy (RF) offering safety benefits. We aimed to compare both systems with regards to safety in patients by measuring for the first time sensitive laboratory markers of cell damage. platelet activation and inflammation after a PVI using either one of those energies.

Methods: Sixty patients with symptomatic drug-resistant AF referred for PVI (56±9 years of age, 48 males. 38 with paroxysmal and 22 with persistent AF) were randomly assigned to undergo the ablation procedure using either an open irrigated tip RF catheter (Thermocool®. Biosense Webster) or a cryoballoon catheter (Arctic front®. Medtronic). Systemic markers of cell damage (procoagulant microparticles [MPs of various cellular origin], troponin T, CK and CK-MB). platelet activation (ADP-induced light transmittance aggregation [LTA], expression of the platelet surface proteins P-selectin [pSEL] and activated GPIIb/IIIa [PAC-1]) and inflammatory response (hs-CRP) were determined frequently before and 4, 24 and 48 hours after the procedure.

Results: Procedure time was significantly shorter in patients treated with the cryoballoon (177±30 min versus 200±46 min. p=0.028), but there were no differences in fluoroscopic time, clinical event rate and success rate. Post-procedural increases of MPs Troponin T and hs-CRP were observed but there were no consistent differences in parameters used for comparative laboratory safety assessment of the ablation systems using either cryoenergy or radiofrequency energy.

Conclusions: Neither systematic sensitive markers of cell damage, of platelet activation nor of inflammatory response could detect any difference in the safety profile between cryoenergy and RF energy used for transseptal PVI in patients with AF.

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Pulmonary vein isolation by cryoballoon ablation in patients with paroxysmal atrial fibrillation: efficacy, safety and predictors of arrhythmia recurrence

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Introduction: Radiofrequency (RF) catheter ablation has emerged as an effective treatment for patients with drug-refractory atrial fibrillation (AF). The objective of this study is to evaluate the efficacy and safety of pulmonary vein isolation (PVI) with a cryoballoon catheter (Arctic Front, Cryocath, Quebec, Canada).

Methods: In 44 consecutive patients with symptomatic paroxysmal AF (28 males, age 57+/-11 years), circumferential PVI was performed using a cryoballoon catheter. Before discharge, all patients were subjected to 24-hour Holter electrocardiograms, echocardiography, and esophageal endoscopy. Magnetic resonance imaging was performed prior to and 3 months after ablation. At a mean follow up of 4.3 +/- 1.2 months after ablation, patients underwent clinical review and 24-hour Holter electrocardiograms. Clinical and demographic variables were analyzed via logistic regression to assess for predictors of recurrence.

Results: Thirty-two of the 44 patients (73%) had complete isolation of all PVs. Out of 176 treated veins, 164 were completely isolated (93%). The number of balloon applications per vein was 2.3 ± 0.8. The mean procedure and fluoroscopy times were 163.4 ± 36.2 and 32.0 ± 11.7 min, respectively. Eight patients had evidence of mild pericardial effusions requiring no further treatment. Five patients (11.4%) experienced phrenic nerve palsy, 4 of which resolved immediately and one at 2 weeks. Follow up at 4.3 +/- 1.2 months showed freedom from AF in 28 patients (63.6%) and freedom from AF without antiarrhythmic drug therapy in 19 patients (43.2%). Of all clinical variables analyzed, only early recurrence of AF within 4 days post ablation was associated with long term AF recurrence (p= 0.002; OR= 0.11; CI= [0.018-0.524]).

Conclusion: PVI can be safely achieved with the cryoballoon catheter with a moderate success rate at 4.3 months follow-up. Early recurrence of AF seems to be a clinical predictor for long term atrial fibrillation recurrence.

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Feasibility, safety and efficacy of 8 mm-tip catheter for radiofrequency catheter ablation of outflow tract ventricular ectopic beats

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Background: Radiofrequency ablation [RFA] of outflow tract ventricular ectopic beats [OTVEBs] can be performed using either a 4 mm or an externally-cooled tip RFA catheter but not data are available concerning the safety and the efficacy with a large-tip [8 mm] catheter. However, experimental and clinical studies suggest that the efficacy of catheters may vary mainly with several parameters including catheter tip, cooling effect, anatomy and catheters orientation. We hypothesized that an 8mm tip catheter can be safely used in patients with OTVEBs.

Objectives: The aim of this prospective study was to evaluate the safety and the efficacy of an 8mm tip catheter in patients with OTVEBs.

Method and Results: Between September 2008 and March 2010, 17 patients were referred for RFA of symptomatic OTVEBs and 2 patients were excluded [1 cardiomyopathy and 1 due to the vicinity of His bundle]. In a primary intent the 8mm tip catheter was tested. Population characteristics were as follows: mean age of 51±17 years; 46.7% female; LVEF (55±8%); VEB morphology [100% LBBB], axis [13 inferior and 2 superior], major symptoms [palpitations in 7, pre-syncope in 6, syncope in 1, and dyspnea in 1], VEB width 144±21 ms, and number of drug failure [2.2±0.5]. RFA succeeded in 14/15 patients [93.3%] and RFA parameters were: procedure time [94±35 min], duration of application [11±10 min], impedance [81±12], temperature [48±5 degree] and power [46±17 watts]. In one patient RFA failed. Recurrence occurred in 1/15 patients [6.6%] with a mean follow-up of 8±6 months. No complication was observed.

Conclusions: This study demonstrated the feasibility, safety and efficacy of a strategy with an 8mm tip RFA catheter to cure patients with outflow tract ventricular ectopic beats.

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Spectral analysis of intracardiac and surface electrocardiograms to determine the need for right atrial ablation in patients with chronic atrial fibrillation

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