

AB9-5

CLINICAL EFFICACY OF PV ANTRUM ABLATION FOR AF BY DUTY-CYCLED RF ENERGY THROUGH A NOVEL CIRCUMLINEAR DECAPOLAR CATHETER

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Introduction: PV antrum ablation remains a lengthy and difficult procedure requiring 3-D navigation, with widely varying success rates. We tested the clinical efficacy of a novel decapolar circumlinear catheter (PVAC, Ablation Frontiers Inc, Carlsbad CA) delivering duty-cycled bipolar and unipolar low power RF energy.

Methods: 45 pts with paroxysmal AF were included in the study from April-December 2007. Structural abnormalities were excluded by MRI and TEE. All PVs were isolated through antrum ablation with the PVAC catheter by application of duty-cycled bipolar and unipolar RF energy (maximum 10 W) producing a target temperature of 60°C at selected electrodes. Alternative ablation devices were not needed in any pt. Follow-up included 3 mo, and 6 mo visits with ECG recording, 24-hr Holter at 6 weeks, and 7-day Holter recording at 6 mo in a drug free state. After a 3 mo blanking period, symptomatic pts were encouraged to visit the hospital for an ECG during complaints, or were equipped with an event recorder. Any left atrial arrhythmia >30 sec was considered a failure of therapy. Anti-arrhythmic therapy was discontinued in all pts at 3 mo.

Results: All 45 pts (9 female) were followed after their PVAC ablation, 20 of which beyond the 3 mo blanking period. The mean age was 61±9 years, mean follow-up was 3±2 mo. In all pts PV isolation was performed with a single PVAC treatment. 32 of 45 pts (71%) became asymptomatic for AF during follow-up. No AF episode was observed on Holter 6 wks after the procedure. Beyond the 3 mo blanking period, in 2 of 20 pts an ECG documented AF recurrence was observed. A 7-day Holter at 6 mo was performed in 14 pts, showing AF in 2 additional pt. Taken together, 20% of pts had a documented AF recurrence after a single PVAC ablation. One of the 45 pts was lost for follow-up due to cerebral hematoma after head trauma while on oral anti-coagulation. No specific procedure related complications were observed, either during the procedure or after 30 days.

Conclusions: PVAC antrum isolation with duty-cycled low power RF energy is a novel ablation technique that is both feasible and safe. Current clinical efficacy is promising with 80% free of AF beyond 3 mo.

AB9-6

PROPHYLACTIC CAVOTRICUSPID ISTHMUS BLOCK IN ADDITION TO PULMONARY VEIN ISOLATION IN PATIENTS WITH ATRIAL FIBRILLATION AND WITHOUT ATRIAL FLUTTER: A RANDOMIZED TRIAL

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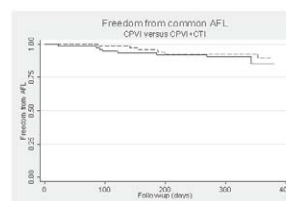
Introduction: This randomized trial evaluates the effect of prophylactic cavotricuspid isthmusblock (CTI) in addition to circumferential pulmonary vein isolation (CPVI) in patients with atrial fibrillation (AF) and without a history of atrial flutter (AFL).

Methods: We randomized 149 patients with AF (54 % paroxysmal AF) to CPVI and CTI (n = 73) or CPVI alone (n =

76). Patients were followed for 12 months with 7 days Holter monitorings after 3, 6, and 12 months. The endpoints were freedom from AFL and AF, respectively. The burden of arrhythmia (% of time in AF/AFL) in Holter recordings was analyzed.

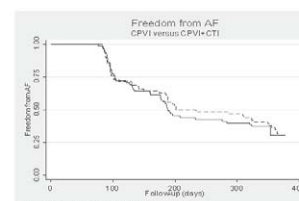
Results: Six patients were lost to follow up. Six patients (4 %) had cardiac tamponade, and one patient had a stroke. We found no difference in the cumulative AFL-free rate between the two treatment groups (CPVI+CTI: 90 % vs CPVI: 85 %, Hazard Ratio (HR) 0.72, 95% CI (0.28-1.87), p = 0.50). There was no difference in the cumulative AF-free rate between the groups (CPVI+CTI: 34 % vs CPVI: 32 %, HR 0.93, 95% CI (0.63-1.38), p = 0.71). We found no difference in the median arrhythmia burden between the CPVI+CTI and CPVI groups at 3 months (42.5 % vs 16 %, p = 0.13), at 6 months (22 % vs 35 %, p = 0.64), or at 12 months (24 % vs 31 %, p = 0.93).

Conclusions: CTI in addition to CPVI in patients with AF, and without a history of AFL, has no effect on the freedom from AFL or AF within 12 months after ablation. CTI did not reduce the overall burden of arrhythmia during follow up. Patients with AF and no history of AFL do not benefit from a prophylactic CTI procedure.



CPVI: solid line; CPVI+CTI: dotted line

Group	Follow-up (days)	0	100	150	200	300	365
CPVI	Female	-	4	1	1	1	4
	Male	-	1	0	0	0	0
	Observed	-	76	71	70	69	68
	No of pts at risk	-	76	71	70	69	68
CPVI+CTI	Female	-	1	1	2	1	2
	Male	-	5	1	0	0	0
	Observed	-	72	68	68	64	61
	No of pts at risk	-	72	68	68	64	61



CPVI: solid line; CPVI+CTI: dotted line

Group	Follow-up (days)	0	100	150	200	300	365
CPVI	Female	-	17	10	14	4	7
	Male	-	1	0	0	0	0
	Observed	-	76	58	48	24	20
	No of pts at risk	-	76	58	48	24	20
CPVI+CTI	Female	-	17	7	9	4	11
	Male	-	2	1	0	0	0
	Observed	-	73	53	48	38	32
	No of pts at risk	-	73	53	48	38	32

ABSTRACT SESSION AB10: Atrial Fibrillation: Mechanisms and Modulation

Thursday, May 15, 2008

1:30 PM - 3:00 PM

AB10-1

CONDUCTION DELAY AT THE MITRAL ISTHMUS LINE CAN BE PREDICTED FROM CONDUCTION DELAY AT THE CAVOTRICUSPID LINE

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Introduction: Conduction block on the cavotricuspid isthmus (CTI) is easier to achieve and validate than for the mitral isthmus (MI). The circuit times around both annuli (i.e. conduction delays) are related to conduction velocity and length around the respective rings. Because both annuli generally have similar perimeters, we hypothesised that peri tricuspid conduction time would predict the expected peri-mitral conduction time

Methods: 122 pts (46 paroxysmal and 76 persistent AF) underwent both CTI and MI ablation. Conduction times were defined (after validation of bidirectional block) as the delay from the pacing artifact to the second potential on the line during contiguous pacing