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P4824 : Comparison of a new circular ablation catheter with conventional approach for pulmonary vein isolation

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Topic(s):

Atrial fibrillation (AF)

Citation:

European Heart Journal (2009) 30 (Abstract Supplement), 813

Introduction: We compared the new pulmonary vein ablation catheter (PVAC) (Ablation Frontiers, Carlsbad, California) with our conventional ablation approach to pulmonary vein isolation (PVI).

Methods: Data was analysed from consecutive patients undergoing PVI for PAF at our centre. "Conventional" ablation for was carried out point-by-point using a roving irrigated tip catheter and a circular pulmonary vein (PV) mapping catheter, combined with 3D navigation (Ensite NavX, St Jude Medical). "PVAC" cases used only the PVAC to map and isolate PVs under fluoroscopy.

Results: Twenty PVAC cases were compared with a matched group of 20 Conventional cases. See table for baseline characteristics. Time to start of ablation was shorter (45 ± 2 vs 75 ± 6 min, $p < 0.001$) as was total time taken to complete PVI (127 ± 5 vs 157 ± 7 min, $p = 0.002$) with PVAC compared to Conventional. There was no difference in radiofrequency delivery time (1852 ± 84 vs 1772 ± 120 s, $p = 0.59$) or fluoroscopy time (56 ± 3 vs 57 ± 3 min, $p = 0.86$). 10 of 15 patients (67%) in sinus rhythm (SR) at the start developed sustained AF with catheter manipulation or during ablation in the PVAC group, compared to 4 of 15 (27%) in the Conventional group ($p = 0.07$); AF termination to SR occurred by ablation in 8 (53%) and 3 (33%) patients respectively ($p = 0.42$). One patient (5%) in the PVAC group had documented AF recurrence, compared to 2 (10%) patients in the Conventional group ($p = 1.00$), at mean follow-up of 3.5 ± 1.6 months and 4.2 ± 1.2 months respectively.

Conclusions: PVI is faster using PVAC alone, compared to conventional approach. This is achieved mainly by reducing time to ablation with no difference seen in ablation delivery time. Early outcomes appear comparable to conventional approach.

	PVAC (n=20)	Conventional Ablation (n=20)	P Value
Age	58±3	54±3	0.25
Male	12 (60%)	14 (70%)	0.74
PAF	20 (100%)	20 (100%)	NA
Mean history of AF (months)	50±10	53±8	0.82
Hypertension	11 (55%)	8 (40%)	0.53
Mean left atrial size (mm)	41±1	42±1	0.75
In SR at start of procedure	15 (75%)	15 (75%)	NA
In AF at start of procedure	5 (25%)	5 (25%)	NA