

Risk factors and effective ablation strategy in patients presenting with left atrial flutter with no previous ablation for atrial fibrillation

S. Mohanty, C. Trivedi, D.G. Della Rocca, C. Gianni, A. Salwan, B. Macdonald, A. Mayedo, M. Bassiouny, G.J. Gallinghouse, J.D. Burkhardt, R. Horton, A. Al-Ahmad, A. Natale

St. David's Medical Center, Texas Cardiac Arrhythmia Institute, Austin, United States of America

Funding Acknowledgement: Type of funding source: None

Background: A typical left atrial flutter (LAFL) may occur as a proarrhythmic complication of ablation for atrial fibrillation (AF).

Objective: We evaluated the risk factors and the best ablation strategy for LAFL in patients with no prior AF ablation.

Methods: Consecutive patients undergoing first catheter ablation for AFL with no prior procedure for AF were included in this prospective analysis. Based on the ablation strategy, patients were divided into, Group 1: PVI+ Flutter ablation (ablation of re-entry circuits) and Group 2: PVI+ Non-PV trigger ablation (targeting areas of focal activity as triggers). 3-D mapping of the LA was performed during tachycardia to identify the reentrant circuit. PV isolation was performed in all patients. In group 1, ablation line was chosen to transect the area critical for the circuit (roof and mitral line). In group 2, ectopic beats arising from extra-PV foci detected by isoproterenol challenge were ablated. Off-drug success rate was assessed in all.

Results: A total of 92 and 90 patients were included in group 1 and 2 respectively. Baseline characteristics are provided in table 1. Pre-existent LA scar was detected in 91.3% and 90% of patients in group 1 and 2 respectively.

At 2 years of follow-up, 11/92 (12%) from group 1 and 60/90 (66.7%) from group 2 remained arrhythmia-free off-drugs ($p < 0.001$). In the multivariate analysis, PVI + flutter ablation was detected to be associated with significantly high risk of recurrence [HR: 3.92 (95% CI: 2.52–6.1, $p < 0.001$)]

Conclusion: In this series of patients presenting with LAFL with no earlier AF ablations, pre-existent left atrial scar was detected in majority of cases and PVI+ non-PV trigger ablation provided significantly better success rate than PVI+ flutter ablation.

Table 1

First procedure for AFL	Flutter line + PVI (n=92)	PVI + PW + SVC + NPV (n=90)	P-value
Age	65.2±9.9	63.1±9.9	0.17
BMI	28.5±5.9	28.6±6.9	0.90
LVEF	55.4±9.8	56.1±7.2	0.58
Female	40 (43.5)	44 (48.9)	0.46
Hypertension	56 (60.9)	56 (62.2)	0.85
Diabetes	14 (15.2)	14 (15.6)	0.95
LA scarring	84 (91.3)	81 (90.0)	0.76
Dyslipidemia	36 (39.1)	28 (31.1)	0.26
OSA	4 (4.3)	6 (6.7)	0.49