Clinical Outcome when Left Atrial Posterior Wall Box Isolation is Included as a Catheter Ablation Strategy in Patients with Persistent Atrial Fibrillation

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Commentary

Despite on-going advances in the feld of catheter ablation, the optimum strategy for ablation of persistent atrial fbrillation (AF) remains unclear. While pulmonary vein isolation (PVI) remains the cornerstone of treatment for AF, success rates remain considerably lower in patients with persistent versus paroxysmal AF.

T e technique of posterior lef atrial wall box isolation has been in increasing use since frst described by Kumagai in 2007 [1] however only limited and conficting data exists with regards to its e f cacy. T e rationale behind isolation of lef atrial wall is based on its common embryonic origin with that of the pulmonary veins and the frequent fnding of drivers and rotors in this area. In our small single centre study [2], we sought to evaluate a strategy of PVI plus posterior lef atrial box isolation, consisting of a lef atrial (LA) roof line and inferior transverse line in a group of 100 patients whose pattern of AF was predominantly persistent (72%). Isolation of the posterior lef atrial wall was achieved in all but one of our patients.

	STAR AF 2 Trial **Verma et al.**	**'Clinical outcome when left atrial box iso fibrillation' O'Neill et al.**
Type of study	Multicentre, randomised controlled trial	Single centre, non-comparative series
Patient numbers	589	100
Pattern of AF	Persistent – 100%	Persistent-72% Paroxysmal-28%
Lesion set	PVI vs PVI plus mitral isthmus and LA roof line vs PVI plus ablation of CFAEs	PVI plus LA box isolation
Follow up monitoring	12 lead ECG and holter monitoring at 3, 6, 12 and 18 months	12 lead ECG and holter monitoring at 3, 6, 12 and 18 months

Table 1: Comparison of aspects of STAR AF 2 trial with our single centre study.

Freedom from recurrent AF on follow-up was achieved in 75%. Obvious limitations include the size of the study and lack of a comparative arm. More specifically the majority of our patients who remained arrhythmia free also underwent additional ablation to sites of high frequency activity elsewhere in the atria based on intra-procedural findings and clinical factors at the discretion of the operator. While this limits our ability to attribute success solely to the box isolation per se it did suggest that our 'real world' strategy of box isolation combined with more extensive substrate ablation as deemed appropriate may be an effective one particularly when compared to other real world data of PVI alone for patients with persistent AF. In addition there were no adverse outcomes associated with this more extensive procedure. Our findings support the current guidelines that recommend adjuvant substrate modification in addition to pulmonary vein isolation in persistent AF.

T e STAR AF 2 trial, which was presented at the ESC by Dr. Verma in 2014 and the results of which were published in the New England Journal of Medicine earlier this year, casts doubt over these guidelines [3]. STAR AF 2 is signifcant in that it is one of the few recent large scale randomised multi-centre trials comparing persistent AF (Table 1). Patients were randomly PVI plus ablation of complex fractionated atrial or PVI plus linear ablation of LA roof line and 18 months rates of the primary outcome of fbrillation afer one procedure were not signifca groups. Lower success rates were seen when con

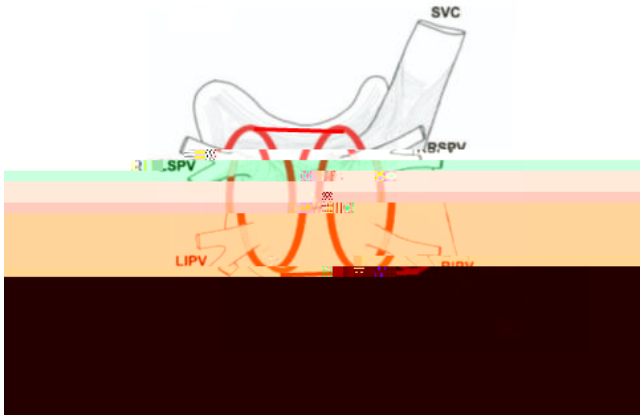

Figure 1: 'Posterior view of le f atrium illustrating lesion set for PVI and posterior LA box isolation'.