

Comparing single approaches success in index atrial fibrillation ablation

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Introduction: Atrial Fibrillation (AF) ablation can be performed by inducing pulmonary vein electrical isolation. There are two widely used approaches: point-by-point and single-shot. Catheter AF ablation is effective in restoring and maintaining sinus rhythm. However, efficacy is limited by high rate of AF recurrence, after an initially successful procedure.

Purpose: To evaluate AF index ablation successfulness using single-shot techniques and compare them to conventional one (point-by-point using irrigated- tip ablation catheter).

Methods: We analyzed, from a single center, all patients submitted to an index AF ablation procedure and its successfulness. The last was defined as AF, atrial tachycardia or flutter recurrence (with a duration superior to 30seconds) event- free survival, determined by holter and/or event recorder. These exams were performed after 6 and 12months and then annually, until 5years post procedure were accomplished.

Results: From November 2004 to November 2020, 821patients were submitted to first AF ablation (male patients 67,2%(N = 552), mean age of 59 ± 12 years old). Paroxysmal AF(PAF) was present in 62,9%(N = 516), with short-duration persistent AF in 21,8%(N = 179) and long-standing persistent in 15,3%(N = 126). Ablation techniques were irrigated tip catheter point-by-point (PbP)ablation in 266 patients (32,4%) and single-shot (SS)techniques on the remaining 555(67,6%), including PVAC in 294(35,8%),225(27,4%) submitted to cryoablation and 36(4,4%) to nMARQ.

Globally, AF ablation had one-year success rate of 72,5%, and 56,2% at 3 years. A significant difference between AF duration type was found: Arrhythmic recurrence risk was 58% higher in persistent AF (PeAF) (HR 1.58;95%IC 1,22-2,04; $p < 0.001$). In patients presenting with PAF prior to the procedure, success was significantly higher in those submitted to SS technique(HR:0.69;95%CI 0,47-0,90; $p = 0.046$), while those with PeAF had similar results.

Conclusion: In this single center analysis almost three-quarters had achieved one-year event-free survival, and more than a half reached long-term freedom from atrial arrhythmia. Patients with paroxysmal atrial fibrillation submitted to single-shot procedure presented with a higher success-rate. Moreover, our study confirmed previous data on the importance of atrial fibrillation classification to postprocedural outcomes.

Abstract Figure. Survival Curves

