

Outcomes of Atrial Fibrillation Ablation

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Catheter ablation (CA) for atrial fibrillation (AF) has evolved over the past 25 years and has become a standard treatment modality. This lecture reviews the outcomes and roles of catheter ablation in the management of paroxysmal and persistent AF.

CA has shown significantly better sinus rhythm maintenance than antiarrhythmic drugs in patients showing symptomatic recurrence of paroxysmal AF in spite of medications. Pulmonary vein isolation (PV) demonstrates freedom from AF recurrence approaching 70-80%, and seems to be the optimal initial ablation strategy. Complete isolation of the PVs shows better outcomes than incomplete isolation lesions. Achieving a more durable isolation is of prime importance, and trials of adenosine or pacing along the circumferential lesions have been introduced for a better outcome. Recently, a more simplified procedure using a cryo-balloon has demonstrated excellent outcomes comparable to conventional RF ablation, and might open a new era of mass production in AF ablation.

For the management of persistent AF, the traditional concept supporting the beneficial role of additional lesions (complex fractionated electrograms or linear lesions) has been challenged by a recent multi-center randomized clinical trial, STAR-AF II. The issue of optimal lesion set for persistent AF is highly controversial, and for the time being, diverse approaches including additional lesions (CFE ablation, linear lesions, LA appendage isolation), stepwise approach, substrate modification seem to prevail. Considering the relatively low long-term sinus rhythm maintenance, a more individualized approach identifying critical regions driving AF (e.g. FIRM mapping, body surface potential mapping) is required.

Finally, the ultimate goal of AF ablation is to achieve a better hard end-point such as improved longevity, reduction of stroke or prevention of heart failure. However, the answer for this question awaits the results of ongoing clinical trials, Catheter Ablation versus Antiarrhythmic Drug Therapy for Atrial Fibrillation Trial (CABANA) and Early treatment of Atrial fibrillation for Stroke prevention Trial (EAST).