Effect of Radiofrequency Catheter Ablation of Atrial Fibrillation on the Clinical Outcome in Patients with Implantable Cardioverter Defibrillator

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Introduction: Atrial fibrillation (AF) is a common trigger for inappropriate shock in implantable cardioverter-defibrillator (ICD) implant patients. We aimed to investigate the effect of radiofrequency catheter ablation (RFCA) of AF on clinical outcome and on the parameters of ICD interrogation, i.e., inappropriate shock, anti-tachycardia pacing (ATP) and misinterpretation as ventricular arrhythmia in AF patients.

Methods: We retrospectively analyzed ICD implanted patients with preexisting AF in a single institute between July 1998 and September 2018. Total 79 ICD implant patients with AF were enrolled. We analyzed ICD interrogation data and compared clinical outcome according to whether RFCA was implemented.

Result: Mean age was 65.4±12.4 years and median follow was 41 months. Secondary prevention of sudden cardiac death was more common (60.8%). In RFCA group, patients were younger than no RFCA group (58.0±12.9 vs 67.9±11.2, p=0.005) and paroxysmal AF was more common (70.0% vs 47.5%, p=0.081). There was no significant difference in mortality and any hospitalization. However, in RFCA group, there were significant differences after RFCA in any event at interrogation (45.0% vs 76.3%, p=0.009) and tendency to decreased inappropriate shock (0% vs 13.6%, p=0.082) and misinterpretation as ventricular arrhythmia (10.0% vs 31.5%, p=0.089).

Conclusion: In ICD implant patients with AF, RFCA of AF did not improve mortality, but reduced unwanted or inappropriate events in ICD and minimized misinterpretation as ventricular arrhythmia.