Mid-term Clinical Outcome After Catheter Ablation for Atrial Fibrillation Guided by Ablation Index at Relatively Low Target Value

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Introduction: Ablation Index (AI) is a novel quantitative marker including power to force and time in the formula and is displayed in real time. Its optimal value remains unclear. This study aimed to assess mid-term outcome after atrial fibrillation (AF) ablation guided by AI at relatively low target values, and to compare it with that after ablation guided by force-time integral (FTI).

Methods: Seventy-two AF patients were included in this study. Thirty-six consecutive patients underwent AI-guided circumferential pulmonary vein isolation (CPVI) with target values of 360 for anterior and 330 for posterior wall (Group 1), and the other 36 consecutive patients underwent FTI-guided CPVI with target value >100 g seconds (Group 2). All patients were followed by periodic clinic visits, electrocardiograms, 24-hour Holter monitoring, and/or symptom-initiated ECG recordings. Recurrence was defined as any atrial tachyarrhythmias lasting ≥30 seconds after a 3-month blanking period.

Result: There was no difference in the total procedure time for CPVI between Group 1 (90±37 minutes) and Group 2 (92±36 minutes) (P=0.89). Total delivery energy was lower in Group 1 than in Group 2 (71631±20020 vs. 82827±24830 J, P<0.05). During a mean follow-up period of 19±4 months, 31 (86%) Group 1 and 33 (92%) Group 2 patients remained free from atrial arrhythmia recurrence (P=0.228). No adverse events occurred in both groups.

Conclusion: Mid-term outcome of AI-guided CPVI at relatively low target values was comparable to that of conventional FTI-guided CPVI. Since AI is displayed in real time, effective ablation without excessive energy delivery is feasible.