Clinical outcome of catheter ablation in patients with atrial fibrillation and sinus node dysfunction

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Introduction: Although catheter ablation of atrial fibrillation (AF) can be considered as a strategy before pacemaker implantation in patients with AF associated bradycardia as class IIA indication, there is limited information on their long-term rhythm outcome in a large number of patients.

Methods: Among total consecutive 3,068 patients who underwent AF catheter ablation (AFCA), this study included 222 patients (7.2%; men 53.2%, 63.7±9.2 years old, 81.5% paroxysmal AF) with underlying sinus node dysfunction (SND) and regular rhythm follow-up. We analyzed the rhythm outcomes, heart rate changes and the permanent pacemaker (PM) implantation rate.

Result: During 54.4±25.4 months of follow-up, 25 (11.3%) patients received PM implantation due to symptomatic SND. More than half of them (56.0%, 14/25) underwent PM implantation within 3 months after AFCA, and annual PM implantation rate was 2.0% afterwards. During 54.4±25.4 months follow-up, both early (68.0% vs 31.0%, \( p<0.001 \)) and clinical AF recurrence (68.0% vs 32.5%, \( p=0.001 \)) rates, and continuous antiarrhythmic drug use after 3 months (44.0% vs. 24.4%, \( p=0.036 \)) were significantly higher in patients who required PM implantation compared to those without.

Conclusion: After AFCA in patients with AF and SND, 1 out of 9 patients needed PM implantation and half of them within 3 months. AF recurrence rate was significantly higher in patients who required PM implantation after AFCA.