Experience of Radiofrequency Catheter Ablation of Atrial Fibrillation in Patients with Structural Heart Disease: Comparable Clinical Outcome despite Advanced Atrial Remodeling

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Backgrounds: We hypothesized radiofrequency catheter ablation (RFCA) of atrial fibrillation (AF) in patients with structural heart disease (SHD) results in outcomes comparable to those with lone AF. Methods: We included 428 patients (age, 56.0±11.0 years; male, 77.3%; paroxysmal AF, 69.4%; persistent AF, 30.6%) who underwent RFCA of AF and compared imaging, hemodynamic, electrophysiologic parameters and clinical outcome between the patients with (n=77) and without (n=351) SHD. SHD included coronary artery disease (CAD, 57.1%), valvular heart disease (23.4%), cardiomyopathy (10.4%), heart failure (6.5%), and congenital heart disease (2.6%). Results: In patients with SHD, LA diameter (p<0.001), LA volume index (p<0.001), E/E' (p<0.001), LA mean pressure (p=0.003), effective refractory period (ERP: p=0.027), and ANP (p=0.005) were significantly higher than those without SHD. In patients with CAD (n=44), there was no significant differences in terms of culprit vessels or number of coronary lesions. There were no significant differences of complications (2.6% vs. 3.7%) and recurrence rates after blanking period (21.1% [28.6% with anti-arrhythmic drug [AAD]] vs. 20.2% [25.9% with AAD]) during 12.7±5.9 months in SHD and no SHD groups, respectively (p=0.859). Conclusion: RFCA of AF in patients with selected SHD results in clinical outcome comparable to those with lone AF, in spite of advanced LA remodeling.

Keywords: atrial fibrillation, ablation, structural heart disease