Pulmonary vein isolation using high-power (50-W) radiofrequency energy in patients with atrial fibrillation

Ungjeong Do

Introduction: High-power short-duration (50 W/5 s) radiofrequency (RF) energy has been used in a few centers for atrial fibrillation (AF) ablation. We aimed to evaluate the efficacy and safety of high-power RF energy in patients who underwent AF ablation.

Methods: From among patients in a prospective AF ablation registry, 86 who underwent high-power ablation were included in this study. All the patients underwent PV isolation using a contact force catheter with an automatic annotation module. The primary efficacy outcome was any recurrent atrial arrhythmia after index ablation. The safety outcome was any complication related to the procedure.

Result: The total procedure, ablation, and fluoroscopy times were 149.4 ± 34.0, 29.1 ± 9.3 and 9.1 ± 4.3 minutes, respectively. During the 3-month period, atrial arrhythmia recurred in 27 patients (31.4%). Among the initial 30 patients in whom RF energy was delivered for 5 s per lesion, 13 (43.3%) had a recurrence of atrial arrhythmia. After prolongation of the RF time to 10 s in the anterior and superior antra, atrial arrhythmia occurred in 14 (25.0%) of 56 patients. Among the 42 patients followed up over the blanking period, 10 (28.5%) showed atrial arrhythmic recurrence during a median follow-up period of 152 days (interquartile range, 104–190 days). Cardiac tamponade or stroke did not occur in any patient. Among 75 patients (87.2%) who underwent upper gastrointestinal endoscopy after ablation, one had a superficial esophageal ulcer.

Conclusion: High-power RF ablation for pulmonary vein isolation was associated with short procedural and RF times and was effective and safe.