Non-Identification of Arrhythmogenic Site Is the Predictor of Long-Term Prognosis after Pulmonary Vein Isolation of Paroxysmal Atrial Fibrillation

Takashi Uchiyama, Hiroshi Taniguchi, Shigeki Kusa, Kei Takayama, Keiichi Hishikari, Yuki Komatsu, Kiyoshi Otomo, Yoshito Iesaka

Tsuchiura Kyodo Hospital, Tsuchiura, Japan

Background: Paroxysmal atrial fibrillation (PAF) can be triggered by ectopies from pulmonary vein (PV) or non-PV foci. We assessed the importance of the identification of arrhythmogenic sources during ablation procedure for long-term prognosis after PV isolation (PVI) for PAF.

Methods and Results: This retrospective study enrolled 205 patients with PAF (age 57±9 years, male 162) undergoing PVI. In 129/205 patients, arrhythmogenic foci was detected during PVI and/or electrophysiologic study after PVI during an isoproterenol administration (2μg/min). During mean follow-up of 72.3±9.9 months after 1.6±0.7 procedures, 174/205 (85%) were free from recurrent arrhythmias without using antiarrhythmic drugs. In multivariate logistic regression analysis among age, gender, left atrial size, the incidence of hypertension, duration of AF, and whether arrhythmogenic site was identified or not, non-identification of arrhythmogenic site was the only independent predictor of the recurrent arrhythmias (OR, 2.657; 95% CI, 1.171-6.029; p=0.019). The rate of arrhythmia recurrence was higher in the patients without identified arrhythmogenic site (17/76 [22.4%] vs. 14/129 [10.9%], p=0.042).

Conclusion: Non-identification of arrhythmogenic foci was associated with the clinical outcome, suggesting the possibility of the presence of non-PV foci and importance of further extensive electrophysiologic study to detect arrhythmogenic foci.

Keyword: atrial fibrillation