Abstract: P387

Predictive factors of arrhythmia-recurrence at the one-year after radiofrequency catheter ablation for paroxysmal atrial fibrillation: insight from kansai plus atrial fibrillation registry.

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On behalf: KPAF registry

Topic(s):
Rhythm Control, Catheter Ablation

Citation:
Background: The predictors of arrhythmia recurrence after radiofrequency catheter ablation (RFCA) for paroxysmal atrial fibrillation (PAF) have not yet been fully evaluated.

Purpose: The aim of this study was to develop and validate a risk scoring system to predict the incidence of recurrence of atrial tachyarrhythmia after RFCA for PAF.

Methods: The study population consisted of 3226 consecutive patients undergoing first-time RFCA for PAF from Nov. 2011 to Mar. 2014 in 26 cardiovascular centers in Japan who were enrolled in the Kansai Plus Atrial Fibrillation (KPAF) registry. We developed a scoring system in a derivation cohort with 2150 patients and assessed its reproducibility in a validation cohort with 1076 patients. The primary endpoint was recurrent atrial tachyarrhythmias lasting for => 30 seconds between 91 and 365 days post the initial ablation.

Results: The baseline patient characteristics of the derivation cohort were as follows: mean age 64.9 ± 10.6 years, male 1473 (68.5%), body mass index (BMI) 23.7 ± 3.5 kg/m2, hypertension 1141 (53.1%), prior heart failure 188 (8.7%), diabetes mellitus 288 (13.4%), prior stroke and/or transient ischemic attack 30 (1.4%), prior vascular disease 215 (10.0%), CHADS2 score 1.1±1.1, CHA2DS2-VASc score 2.1±1.5, number of ineffective antiarrhythmic drugs (AAD) 0.80, duration of history of AF episodes 4.3 years, left atrial diameter (LAD) 38.2±6.3 mm, left ventricular ejection fraction (LVEF) 65.4±8.3%, and eGFR 68.4±18.6 mL/min/1.73m2. There was no significant difference in the baseline characteristics between derivation and validation cohorts.

The results of the multivariate logistic regression models identified 6 independent variables of recurrent atrial tachyarrhythmias at 1-year after first ablation: female (odds ratio (OR)=1.30, p=0.0097), BMI <25 kg/m2 (OR=1.25, p=0.034), duration of AF history 1year<= (OR=1.56, p<0.001), prior vascular disease (OR=1.39, p=0.016), number of failed AAD 1<= (OR=1.39, p=0.0007), and LVEF <50% (OR=1.59, p=0.048). The predictive score for each factor was 1 point (6 points in total). The 1-year arrhythmia-free rates in the derivation cohort according to the score were as follows: 0 point =88.4%, 1 = 80.5%, 2 = 74.4%, 3 = 68.9%, 4 = 64.2%, and 5 = 45.0%. No one had 6 points. Moreover, the 1-year arrhythmia-free rates of patients with total score of 0, 1-2, 3-4, 5 were 88.4%, 76.5%, 67.6%, and 45.0%, respectively. The similar results were reproduced in the validation cohort.

Conclusion: Our newly developed scoring system, composed of female, BMI, AF duration, vascular disease,
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Conclusion: Our newly developed scoring system, composed of female, BMI<25, AF history 1year<=, vascular disease, failed AAD 1<=, and LVEF<50. The predictive score for each factor was 1 point (6 points in total).

Figure 1. Free from recurrent atrial tachyarrhythmia after the initial RFCA for PAF

6 independent predictors for recurrent atrial tachyarrhythmia; female, BMI<25, AF history 1year<=, vascular disease, failed AAD 1<=, and LVEF<50. The predictive score for each factor was 1 point (6 points in total).