Prolonged Atrium Electromechanical Interval Was Associated with Strokes in Patients with Atrial Fibrillation after Successful Catheter Ablation

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Background: Atrial fibrillation (AF) was associated with increased risk of strokes. Catheter ablation of AF provides an effective therapy for patients with drug-refractory AF. The aim of this study was to evaluate whether the atrial electromechanical interval was useful in identifying patients at risks of strokes after successful catheter ablations.

Methods: Total 295 AF patients who received catheter ablations without recurrences were enrolled. Electromechanical interval (PA-PDI) was determined as the time interval from the initiation of P wave deflection to the peak of mitral inflow A wave on the pulse wave Doppler imaging. The PA-PDI interval was measured 3 months after the catheter ablation. The clinical endpoint was the occurrence of ischemic stroke.

Results: During the mean follow up of 46.5 months, 6 patients suffered from ischemic strokes. Patients with strokes had higher CHADS2 scores and longer PA-PDI intervals. In the multivariate analysis, the PA-PDI interval was an independent predictor of strokes with the hazard ratio of 1.131 per one mm increment. At a cut-point of 150 ms identified by the ROC curve, the positive and negative predictive values of the PA-PDI interval to predict strokes were 86.7% and 100%, respectively.

Conclusions: The PA-PDI interval was a useful tool to identify patients with high risks of strokes after successful catheter ablations of AF.

Keywords: atrial fibrillation, electromechanical interval