

Clinical Impact of Eliminating Non-Pulmonary Vein Triggers in Patients with Persistent Atrial Fibrillation: Highlights on Non-Pulmonary Vein Foci and Premature Atrial Contraction

Shota Tohoku¹, Masato Fukunaga¹, Michio Nagashima¹, Jun Hirokami¹, Kengo Korai¹, Kei Yamamoto¹, Harushi Niu¹, Ayaka Takeo¹, Kenji Ando¹, and Kenichi Hiroshima¹

¹Kokura Memorial Hospital

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Abstract

Backgrounds: The role of non-pulmonary vein (PV) triggers ablation in persistent atrial fibrillation (PEAF) was suggested but it is still under debate. **Objectives:** We aimed to assess the effectiveness of non-PV trigger targeted ablation for patients with PEAF. **Methods:** Consecutive patients with PEAF undergoing catheter ablation (CA) between January 2015 and April 2017 were enrolled. Isoproterenol plus adenosine challenge was performed to provoke non-PV triggers. Non-PV triggers were defined as the non-PV foci inducing AF and/or frequent premature contraction (non-PV PAC) from other than PVs. Three groups were defined: group 1 (n=186) without non-PV triggers; group 2 (n=65) with non-PV triggers that could be completely eliminated with CA; group 3 (n=49) with non-PV triggers still inducible after CA. Primary endpoint was freedom from any atrial tachyarrhythmia (ATa) recurrence. **Results:** A total of 300 patients (230 males, age 64±10) were enrolled. Mean follow-up period was 27±10 months. Freedom from ATa recurrence at 1- and 2 years were significantly lower in group 3 compared to the other 2 groups (group 1; 74.7%, 67.2% vs. group 2; 75.8%, 68.3% vs. group 3: 52.1%, 38.6%, P=0.0005), irrespective of the type of non-PV triggers (non-PV PAC vs. non-PV foci initiating AF). On multivariate analysis, unsuccessful elimination of non-PV trigger was an independent predictor for ATa recurrence (HR 1.80 [95%CI:1.07-2.93], P=0.026). **Conclusions:** Successful non-PV trigger elimination can improve the ATa recurrence rate in PEAF ablation. ATa recurrence rate is higher, if non-PV foci or even non-PV PAC remains in patients with PEAF.

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