Clinical Predictors of Left Atrial Low Voltage Area in Patients with Atrial Fibrillation

Shunsuke Kawai  
Yasushi Mukai  
Kazuhiro Nagaoka  
Kazuo Sakamoto  
Shujiro Inoue  
Daisuke Yakabe  
Shotaro Ikeda  
Akiko Chishaki  
Hiroyuki Tsutsui

Introduction: Low voltage area (LVA) plays a critical role in the recurrence of atrial fibrillation (AF). However, factors associated with the presence of LVA remain unclarified.

Methods: Ninety-six patients (66 yo, 67 males) with AF who underwent pulmonary vein isolation (PVI)-based ablation were studied. All patients underwent a left atrial voltage mapping during sinus rhythm following completion of PVI. LVA with ≥10% of the left atrial body surface area was defined as significant.

Result: Twenty-nine patients (30.2%) had LVA ≥10%. Univariate analysis revealed that age, female, persistent AF, left atrial volume index (LAVI), and prior stroke were significantly associated with LVA. Multivariate analysis revealed that female (OR 8.5, p=0.0009), persistent AF (OR 6.5, p=0.01), and age (per decade) (OR 3.2, p<0.05) were independently associated with LVA, but LAVI was not.

Conclusion: Age, female gender and persistent AF, but not left atrial enlargement, are related to the presence of LVA.