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

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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.