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 $\geq10\%$ of the left atrial body surface area was defined as significant.

Result: Twenty-nine patients (30.2%) had LVA $\geq10\%$. 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.