Stroke risk in paroxysmal and persistent atrial fibrillation treated with anti-arrhythmic drugs vs catheter ablation

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Introduction: Atrial fibrillation (AF) is known to promote thrombus formation in the left atrium and thus increases the risk of stroke. The best rhythm-control strategy, anti-arrhythmic drugs (AAD) or catheter ablation, still remains controversial especially in non-paroxysmal AF patients. We sought to compare the rate of thromboembolic (TE) events in AF patients receiving catheter ablation with published stroke rate in patients treated with AAD.

Methods: A total of 2741 consecutive paroxysmal or persistent AF patients receiving catheter ablation at our center were included in the analysis and prospectively followed up for 3 years. All patients received isolation of the pulmonary veins, left atrial posterior wall and empiric isolation of the superior vena cava as our standard procedure. Oral anticoagulation was prescribed for 6 months post-ablation after which it was discontinued in all patients remaining arrhythmia-free. Patients were followed up for thromboembolic events that included ischemic stroke and transient ischemic attack (TIA). Stroke was defined as the onset of a new neurological deficit that persisted for >24 hours. If the duration of the deficit was <24 hours, it was defined as TIA. We compared the post-ablation stroke rate in our population with the rate reported in the ‘other AAD’ group in the ROCKET-AF trial (Heart Rhythm. 2014; 11(6): 925–932) where outcome of AAD therapy (other than amiodarone) in anticoagulated AF patients was described. We selected the ‘other AAD’ group for comparison because none of our patients received amiodarone after the ablation procedure.

Result: The ‘other AAD’ group of the ROCKET-AF trial included 537 patients (319, 59.4% paroxysmal AF) whereas our study population had 1124 (41%) paroxysmal AF. Baseline CHADS2 score was comparable between the two populations; 3.3±0.9 and 3.36±0.5 in the AAD group and our population respectively. At 3 years follow-up, 10/2741 (0.36%) events were reported in the catheter ablation cohort and 8/537 (1.5%) in the AAD population (p=0.001).

Conclusion: In paroxysmal and persistent AF patients, catheter ablation was associated with
significantly lower stroke rate than the anti-arrhythmic drug therapy combined with oral anticoagulation.