Long Term Outcome of 2nd Generation Cryoballoon Ablation for Paroxysmal Atrial Fibrillation Compared with Radiofrequency Ablation: A single-center retrospective study.

Toshikazu Kono  
Yukihiro Inamura  
Giichi Nitta  
Takashi Ikenouchi  
Kazuya Murata  
Tomomasa Takamiya  
Akira Sato  
Osamu Inaba

**Introduction**: Pulmonary vein isolation (PVI) has been regarded as a cornerstone for the treatment of atrial fibrillation (AF). Recently, Cryoballoon ablation has emerged as an effective alternative treatment to radiofrequency ablation. We analyzed the procedural experience of Cryoballoon ablation compared with radiofrequency ablation in the patients with paroxysmal AF (PAF).

**Methods**: In this retrospective single-center study, we evaluated the outcome of 1300 consecutive PAF patients from September 2014 to September 2018 (Cryo-group). The control group is the 326 consecutive PAF patients who underwent radiofrequency ablation from January 2014 to September 2018 (RF-group). In our hospital, all patients underwent high-dose isoproterenol infusion after PVI to reveal non-PV foci and an additional ablation if needed. The primary end point was freedom from AF or atrial tachycardia (AT) without any antiarrhythmic drug.

**Result**: The mean follow up was 589 days (Cryo-group: 530 days, RF-group: 826 days). At 1 year follow up, a ratio of freedom from AF or AT without any antiarrhythmic drug was 89.1% in Cryo-group and 85.1% in RF-group. At 2 years follow up, 82.6% in Cryo-group and 80.5% in RF-group, and at 3 years follow up, 77.5% in Cryo-group and 75.9% in RF-group. There was no significant difference between the two groups (P = 0.39).

**Conclusion**: In our hospital, there was no significant differences in at 3 years outcome between Cryoballoon ablation and radiofrequency ablation for the treatment of paroxysmal AF.