Efficacy and safety of the second generation cryoballoon ablation for atrial fibrillation in patients over 75 years.

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Introduction: The second generation cryoballoon ablation (CBA) was reported to have similar efficacy and safety to radiofrequency catheter ablation (RFCA) for paroxysmal atrial fibrillation (PAF). However, the safety and efficacy of CBA for AF in the patients over 75 years are still unknown. The purpose of this study was to evaluate the safety and efficacy of CBA in patients over 75 years compared with radiofrequency (RF) ablation.

Methods: We retrospectively evaluated consecutive patients who received PAF ablation from September 2011 to March 2017. The number of 408 patients were with RF ablation (RF group), and 290 patients were with CB (CB group).

Result: The number of patients over 75 years was significantly higher in CB group (24.1% vs. 15.1%, P=0.005). The prevalence of female was significantly higher in CB group as compared with RF group (52.9% vs. 35.9%, P=0.0048), and left atrial dimension (LAD) was significantly larger in RF group (40.5±6.5 mm vs. 37.8±6.4 mm, P=0.019). Procedure time and fluoroscopy time were significantly shorter in CB group (91.2±29.0 min vs. 158.8±24.4 min and 51.9±21.0 min vs. 80.8±21.4 min, respectively, P<0.0001). Death and systemic embolism were not occurred in this study. There was no significant difference in the rates of procedural complications including acute gastric dilation, phrenic nerve palsy, cardiac tamponade, and vascular injury between the 2 groups (1.4% vs. 4.7%, P=0.26). The rates of early recurrence of atrial-tachyarrhythmias (ATAs) within 90 days were not significantly different between 2 groups (25.7% vs. 25.0%, P=0.92). The overall 1-year success rate of a single CBA was 81.3% and the event-free rates from recurrent ATAs were not significantly different between the 2 groups (85.7% vs. 76.6%, P = 0.17).

Conclusion: CBA for AF with second generation device was similar success and complication rates compared with RF ablation in elderly patients.