Comparison of Adenosine-induced Dormant Conduction After Pulmonary Vein Isolation for Atrial Fibrillation Among Different Ablation Devices

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Introduction: Although adenosine is useful to reveal dormant conduction (DC) after pulmonary vein isolation (PVI) in atrial fibrillation (AF) patients, the differences of its incidence among different ablation devices are not thoroughly investigated.

Methods: A total of 499 paroxysmal AF patients who underwent the initial PVI (irrigated-radiofrequency; RF, n=224, cryoballoon; CB, n=221, hotballoon; HB, n=40 and laserballoon; LB, n=14) were included. Adenosine was injected under isoproterenol infusion to reveal DC after PVI in all patients. We compared the incidence of DC among 4 different ablation devices.

Result: Adenosine-induced DC was observed in 50%, 10%, 35% and 0% of patients, and 21%, 3%, 12% and 0% of PVs in RF, CB, HB and LB, respectively. The incidence of DC was significantly lower in CB and LB compared to RF and HB (Figure).

Conclusion: CB and LB demonstrated extremely lower incidence of DC compared with RF and HB, which may indicate higher durability of PVI with CB and LB ablation. Further investigation will be needed to clarify its relation to the clinical outcomes.