The experience of cryoablation in paroxysmal atrial fibrillation in Korea

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Introduction: Pulmonary vein isolation (PVI) is the cornerstone of ablation in atrial fibrillation. PVI can be done safely and efficiently using a cryoballoon technology with similar efficacy as radiofrequency ablation. Cryoablation is world-wide used in atrial fibrillation. However, there is not many cases in Korea. Therefore, We reported the experience of the cryoablation in paroxysmal atrial fibrillation (PaAf) in Korea.

Methods: We experienced 4 cases of cryoablation in paroxysmal atrial fibrillation. All 4 patients of PaAf had antiarrhythmic drug medication over 6 weeks. They suffered mild short of breath, palpitation and chest discomfort. In 4 cases, we treated patients using the Arctic Front cardiac ablation system (Medtronic cryocath LP).

Result: In first 2 cases, we did the trans-septal puncture via lower-anterior portion of foramen ovale, and in last 2 cases, we did the trans-septal puncture via foramen ovale. It seems that there was no significant difference in catheter handling. We performed PVI with only 28mm balloon in 4 cases. At first, we assessed targeted vein, and inflated and adjusted achieve catheter and then we occluded and ablated. Finally, we assessed PVI. We ablated initially in left superior pulmonary vein. And then, we ablated in left inferior pulmonary vein and right superior pulmonary vein. At last, we ablated in right inferior pulmonary vein. In TTI < 60 secs, we ablated for only 3 mins. In 90 ≥ TTI > 60 secs, we ablated one more time during 3 mins after 3 mins cryoablation. To avoid esophageal injury, we used the esophageal temperature monitoring. And to avoid the phrenic nerve injury, we used the pacing/palpitating diaphragm method.

Conclusion: We did not experience enough case, but there was not any complication such as major bleeding, tamponade, esophageal injury or acute/chronic phrenic nerve injury. After 3 months from cryoablation, there was no any atrial tachy-arrhythmia in spite of no antiarrhythmic drug medication.