Temporal trends of catheter ablation for patients with atrial fibrillation: a Korean nationwide population-based study

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Introduction: After the introduction of catheter ablation for atrial fibrillation (AF), it has been extended more widely as a treatment to restore and maintain sinus rhythm in patients with AF. However, limited data exist regarding temporal trends of AF ablation in an Asian population. This study aimed to estimated temporal trends of catheter ablation for AF in Korea between 2007 and 2017.

Methods: National claims database provided by the National Health Insurance Service in Korea was utilized. Patients with AF underwent catheter ablation for AF were identified using combinations of a diagnostic code, history of claims, and procedure code. Comorbidities and complications were also identified, and their temporal trends were evaluated.

Result: Prevalence of patients with AF showed 2.3-fold increment from 33.0 per 10,000 persons in 2007 to 73.9 per 10,000 persons in 2017 (P-for-trend <0.001). The numbers of catheter ablation for AF was also steadily increased over eleven years (452 patients in 2007 vs. 3,035 patients in 2017, P-for-trend <0.001) (Figure). Mean age of the patients underwent RFCA was increased (54.8 ± 10.1 years in 2007 vs. 59.3 ± 10.3 years in 2017) and the proportion of elderly patients (age over 70 years) particularly increased during study period (7.5% in 2007 vs. 16.2% in 2017, P-for-trend <0.001). Hemorrhage requiring transfusion and cardiac tamponade were the two most common complications, but rates substantially decreased during the study period [8.6% vs. 3.1% (P-for-trend <0.001) and 7.1% vs. 2.4% (P-for-trend 0.012), respectively. Mean incidences of any cause of death within a month was 0.14 ± 0.06% and those were not changed significantly over time (P-for-trend 0.023).

Conclusion: Over the 11 years, catheter ablation has become an important treatment option and continuously increased from 0.3% to 0.8% among total patients with AF. Although the proportion of high-risk patients increased, acute complication decreased over the study period.