Introduction: There are limited data regarding the burden and trends in adverse outcomes from catheter ablation of atrial fibrillation (AF) in Korea. The aim of this study was to examine the frequency of adverse events associated with AF catheter ablation, and trends of complications during 10 years.

Methods: Among 801,710 patients with AF from 2006 to 2015 in the Korean National Health Insurance Service database, 9,768 individuals underwent first catheter ablation for AF. We investigated complications described with AF ablation.

Result: 2,700 and 7,068 procedures were conducted in the first half period (2006-2010) and the second half period (2011-2015), respectively. The overall frequency of complications was 7.73%. The in-hospital mortality was 0.08%. Hospital volume was significantly associated with adverse outcomes. There was a significant decrease in the acute complication rate in the second half period (2011 to 2015) compared with the first half period (2006 to 2010) (7.10% versus 9.37%; P<0.001). Incidence rates of pericardial effusion, cardiac tamponade, and cardiac surgery due to procedure complication were decreased. Incidence rates of atrioesophageal fistula and access site complications needing vascular intervention were increased. Other complication rates including stroke and mortality were not changed.

Conclusion: The overall complication rate was 7.73% in patients undergoing first AF ablation during one decade in Korea. There was a significant association between hospital volume and adverse outcomes. The overall complication rate was significantly decreased with a large increase in the number of procedures during ten years in Korea.