Introduction: The optimal radiofrequency (RF) power for atrial fibrillation (AF) ablation remain unclear. We evaluated the safety and efficacy of 50W RF power during AF ablation with using Ablation Index (AI).

Methods: We evaluated 17 patients, including 5 patients not using any contact medium, with paroxysmal (n=3) or persistent (n=14) AF undergoing initial AF ablation. RF was delivered for reaching AI>370 at posterior wall and AI>400 at anterior wall. The part of esophageal were performed by 50W RF ablation within 5 seconds. Internal esophageal temperature was monitored dynamically.

Result: First pass isolations for the left and the right pulmonary veins (PV) were 100% and 82.3%, respectively. The number of RF tags to enclose the PV was 34 ± 9. The time of applying a RF tag was 10.2 ± 3.8 seconds except the part of esophageal. Procedure and PV isolation times were 70.5 ± 12.7 min and 12.0 ± 4.4 min, respectively. There was no adverse event, including pericardial effusion, pericarditis, esophageal injury. Maximum esophageal temperature was 42.6°C, but it fell below 40°C as 20 seconds passed.

Conclusion: High power short duration RF ablation for AF using AI is safe and effect with a high rate of first pass isolation and short procedure times.