Background: Open irrigated catheter (OIC) has the advantage of radiofrequency (RF) ablation power delivery without thrombus formation. It had been proposed that OIC are capable of creating larger lesions resulting in greater efficacy. This study compared the efficacy and safety of OIC and conventional 4mm tip catheter (NIC) retrospectively.

Method: One hundred fifty-five patients underwent circumferential pulmonary vein and antrum isolation (CPVAI) using NIC (Group1, 76 patients; temperature limited ≤55°C with maximum power 35W) or OIC (Group2, 79 patients; temperature cut ≤42°C and power set 30-40W with a saline pump flow rate of 30mL/min) were compared about ablation and procedural parameter and clinical outcome.

Results: The procedural parameter (total procedure time, fluoroscopic time, total number of RF energy delivery) to achieve complete CPVAI was not significantly different between two groups without total RF energy delivery (48635±10123 in Group1 versus 77812±17505 J in Group2, P<0.01). Three procedural complications were documented in Group2 (cardiac tamponade, pericarditis, gastric hypomotility) and none in Group1. During follow up period, AF free rate was not differed between two groups in short term follow up.

Conclusion: CPVAI using OIC had more procedural complications than NIC ablation whether there is no apparent efficacy during ablation procedure and a similar outcome in this study. Further examination would be necessary how to manage the power and irrigation flow setting while using OIC in CPVAI.

Keywords: atrial fibrillation, circumferential pulmonary vein and antrum isolation, open irrigated catheter