Safety and efficacy using high-power and short-duration ablation for cavotricuspid isthmus ablation

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Introduction: There have been many studies on high-power and short-duration ablation in atrial fibrillation (AF) patients. However, limited data exists on cavotricuspid isthmus (CTI) ablation for atrial flutter (AFL). We evaluated the efficacy and safety of high-power and short-duration ablation for CTI ablation.

Methods: Eighty-four patients who underwent CTI ablation between January 2018 and February 2019 were randomly assigned 1:1 to a high-power group (50W for 15 seconds) and low-power group (30W for 60 seconds). CTI ablation was performed in patients with documented AFL or AFL induced during ablation for AF. We analyzed procedural characteristics, periprocedural complications and recurrence of any type of atrial tachyarrhythmia (ATa).

Result: Total 84 patients (mean 57.8±10.3 years old, and 86% were male) were randomly assigned high-power group (n=42) and low power group (n=42). Bidirectional CTI block was achieved in all patients and 95% of them achieved bidirectional block after the first line ablation in both groups. Although there was no difference in the total ablation number between the two groups (1.17±0.7 vs. 1.39±0.8, p=0.159), high power group showed shorter total ablation time (235.9±85.6 sec vs. 550.4±233.8 sec, p<0.001). One pericardial tamponade and 1 atrioventricular block were reported in high power group and 1 pulmonary vein stenosis was reported in low power group (p=0.314). During the mean follow-up of 214.5±126.8 days, CTI-dependent AFL recurrence was occurred in 1 patient in high power group. Recurrence of ATa exclude blanking period were developed in 9 patients in high power group and 5 patients in low power group, respectively (21% vs 12%, p=0.242).

Conclusion: Our study demonstrated that high-power, short-duration CTI ablation was safe and could shorten the procedure time.