**Introduction**: Atrioventricular junction (AVJ) ablation improves the outcomes of cardiac resynchronization therapy (CRT) in patients with atrial fibrillation (AF). We report our initial results of AVJ ablation in patients with CRT.

**Methods**: Eight consecutive patients who underwent AVJ ablation between May 2017 and June 2019 were included. Clinical, electrocardiographic, and echocardiographic data were reviewed and analyzed.

**Result**: The mean age was 69.2 years, and 4 patients had non-ischemic cardiomyopathy. Left bundle branch block was present in 6 cases. Two patients who were unsuitable for AF ablation (high-risk) underwent AVJ ablation. Seven patients had persistent AF, and 1 had a paroxysmal AF/organized atrial flutter. AVJ ablation (using an external irrigation catheter) was successful using a right-sided approach in 7 patients and a left-sided approach in 1. Left ventricular (LV) lead dislodgement occurred in 1 case. Immediate decreases in the left atrial size (from 53.4±6.5 mm to 43.7±19.5 mm, p=0.27) and left ventricular end-systolic volume (from 136.6±40.2 mL to 104.7±38.8 mL, p=0.13), with improvement in LV ejection fraction (from 27.8±4.8% to 36.4±8.4%, p=0.01), were observed. Of 3 patients with >6 months of echocardiographic follow-up data, LV ejection fraction improved to 50.7±2.1% (p=0.02). The AV conduction resumed in the first case 24 months after AVJ ablation.

**Conclusion**: AVJ ablation is highly effective for reverse remodeling of the left ventricle and improving ventricular function in patients with AF and severe LV dysfunction.