Introduction: Medical therapy for attaining rhythm control in longstanding persistent atrial fibrillation (AF) has been suboptimal. A novel hybrid thoracoscopic epicardial ablation and endocardial ablation has shown promising results in case series. We present mid-term findings on the safety and the effectiveness of hybrid epicardial/endocardial ablation for persistent and longstanding persistent atrial fibrillation.

Methods: Between 2017 and 2018, ten patients with persistent and longstanding persistent atrial fibrillation underwent totally thoracoscopic radiofrequency ablation procedure with pulmonary vein isolation, box lesion and left atrial appendage exclusion. They subsequently underwent endocardial mapping with the Rhythmia system and catheter ablation three months later. Any gaps from epicardial ablation were re-ablated. All patients were prospectively followed up.

Result: All patients were male and the mean age was $59.3 \pm 6.8$ years. 30% of patients had persistent AF and 70% long standing persistent AF. Mean duration of AF preoperatively was $33 \pm 20.5$ months. Mean left atrial volume was $51.5 \pm 9.8$ mL/m$^2$ Median duration of follow up was 321 days and in this period there were no deaths, conversion to median sternotomy, systemic thromboembolic events or pacemaker implantation. One patient required admission for management of a post-operative left sided pleural effusion. All patients have remained in sinus rhythm with two patients successfully weaned off oral anticoagulants and anti-arrhythmic drugs. One patient had recurrence of atrial fibrillation due to thyrotoxicosis. One patient required repeat endocardial ablation for mitral annular atrial flutter.

Conclusion: Sequential hybrid ablation for longstanding persistent AF may be a safe and effective procedure for persistent and longstanding persistent AF in select patients.