Objective To investigate the factors predicting the recurrence of atrial fibrillation (AF) after catheter ablation.

Methods 186 patients (55.12±12.06 years, 123 male) including 161 paroxysmal AF and 25 non-paroxysmal AF who underwent catheter ablation were studied. Clinical datum before and during ablation were recorded, and systematic follow-up was conducted after ablation. Univariate and multivariate analysis were carried out to determine the factors predicting late recurrence of AF (LRAF) which means AF recurrence after 3 months.

Results There were 47 (25.27%) patients experienced LRAF. Multivariate Logistic regression analysis was carried out to the parameters that p<0.10 in the univariate analysis, which including overweight/obesity, metabolic syndrome (MetS), AF categories, duration of AF, left atrial diameter (LAD), diabetes mellitus, ablation strategies, procedural failure and early recurrence of AF after ablation (ERAF). Ultimately, the results demonstrated that overweight/obesity (OR 4.71, 95% CI 1.71 to 12.98, p=0.003), MetS (OR 4.41, 95% CI 1.56 to 12.46, p=0.005), procedural failure (OR 58.34, 95% CI 6.83 to 498.34, p<0.001) and ERAF (OR 3.18, 95% CI 1.07 to 9.44, p=0.037) were independent predictors of AF recurrence after ablation.

Conclusion The diagnosis of overweight/obesity, and metabolic syndrome preablation, procedural failure and ERAF are independent predictors of LRAF in this group of patients.