Introduction: Hypertrophic cardiomyopathy (HCM) is the most common genetic cardiovascular disorder. Atrial fibrillation (AF) is the most common sustained arrhythmia in patients with HCM. This study focused on identification of electrocardiographic (ECG) and echocardiographic predictors of AF in HCM patients.

Methods: We included 90 patients of HCM. They were divided into two groups, HCM-PAF (Paroxysmal AF) group (n=30) and HCM-SR group (Sinus rhythm, no history of PAF) (n=60). All patients were in sinus rhythm at the time of study. Patients with persistent AF were excluded. Patients with conditions which can lead to secondary left ventricular hypertrophy like hypertension, valvular aortic stenosis, coarctation of aorta etc were excluded. Detailed ECG and 2-D echocardiographic parameters were studied.

Result: There was no significant difference in age, gender distribution, prevalence of diabetes mellitus, and family history of sudden cardiac death in two groups. Patients in HCM-PAF group had significantly higher mean maximum P wave duration (Pmax) and P wave dispersion (PWD) on ECG. Echocardiographic parameters like left atrial (LA) diameter, LA volume, severity of diastolic dysfunction were significantly higher in HCM-PAF group. There was no significant difference in left ventricle (LV) size, LV wall thickness, LV outflow tract gradient and severity of mitral regurgitation in both the groups. On Univariate regression analysis, ECG parameters like Pmax, PWD; echocardiographic parameters like LA diameter and LA volume, grade of diastolic dysfunction were predictors for AF. Pmax and PWD were independent risk factors for AF on multivariate regression analysis.

Conclusion: LA remodeling is the cornerstone for predicting AF. Pmax, PWD on ECG and LA diameter, LA volume, degree of diastolic dysfunction on echocardiography predict increased risk of development of AF in HCM patients.