P827

Left atrial contractile function is the main correlate of atrial fibrillation in patients with hypertrophic cardiomyopathy

Rosca M.; Mandes L.; Ciuperca D.; Calin A.; Beladan CC.; Enache R.; Jurcut R.; Baicus C.; Coman IM.; Ginghina C.; Popescu BA.

University of Medicine and Pharmacy Carol Davila, Euroecolab, Bucharest, Romania

Background: Given the negative impact of atrial fibrillation (AF) in patients (pts) with hypertrophic cardiomyopathy (HCM), finding new and better predictors of AF is clinically important, especially for patients considered at low or intermediate risk based on current recommendations (i.e. left atrial diameter, LAD <45 mm).

Purpose: To assess the relationship between left atrial (LA) remodelling (size and function) and the presence of paroxysmal AF in HCM patients with and without increased LAD.

Methods: A comprehensive echocardiogram was performed in 110 consecutive pts (52 ± 17 years, 50 men) with HCM, in sinus rhythm. Indexed LA volume (LAVi), maximum left ventricular wall thickness (LVWT), LV ejection fraction, E/e' ratio were determined. Global longitudinal LV strain (GLS) and LA strain parameters (LAε, SSr, ASr) were assessed by speckle tracking echocardiography. Patients were divided into two groups according to the presence (30 pts) or absence (80 pts) of documented paroxysmal AF (24/48 h ambulatory ECG recordings)

Results: Patients with AF were older than pts without AF ($p < 0.001$). LAD, LAVi, E/e' were significantly higher, while LAε, ESr, ASr were significantly lower in pts with AF compared to pts without AF ($p < 0.05$ for all). There were no significant differences between pts with and without AF regarding: gender, LVWT, GLS, the presence and severity of LV outflow tract obstruction ($p > 0.05$ for all). The correlates of AF in the whole HCM study population were: age (OR = 1.05, $p = 0.001$), ASr (OR = 10.1, $p < 0.001$), LAVi (OR = 1.03, $p = 0.004$), LAD (OR = 1.2, $p = 0.001$), E/e'(OR = 1.05, $p = 0.02$) and mitral regurgitation degree (OR = 1.6, $p = 0.04$). ASr had the best area under the curve (AUC: 0.74) with a cutoff of -0.88 s-1 for identifying HCM patients with AF (sensitivity: 80%, specificity: 65%). At multivariable logistic regression analysis, age, LAVi and ASr emerged as the only independent correlates of AF. 14 of the 71 patients with a LAD < 45 mm had paroxysmal AF. In this selected population, pts with AF were older ($p = 0.001$), had higher values for E/e' ($p = 0.04$) and lower values for ASr ($p = 0.02$) than pts without AF. Moreover, in this subgroup of pts, at multivariable logistic regression analysis, ASr correlated with AF independently of age, LA dimensions, LV hypertrophy or E/e' (OR = 10.008, 95% CI 1.297-77.219, $p = 0.02$).

Conclusions: In pts with HCM, age, LAVi and ASr, were independently related to the presence of AF, while LAD was not. Moreover, in the subgroup of HCM pts with LAD < 45 mm, ASr (reflecting LA contractile function) was the only LA remodelling parameter correlated with the presence of AF. The assessment of LA volume and function can provide further insights into the risk stratification of pts with HCM, especially in pts considered at lower risk for AF based on the assessment of classical risk parameters, such as LAD.