322 Atrial morphological and functional parameters in hypertrophic cardiomyopathy: cardiovascular outcome implication

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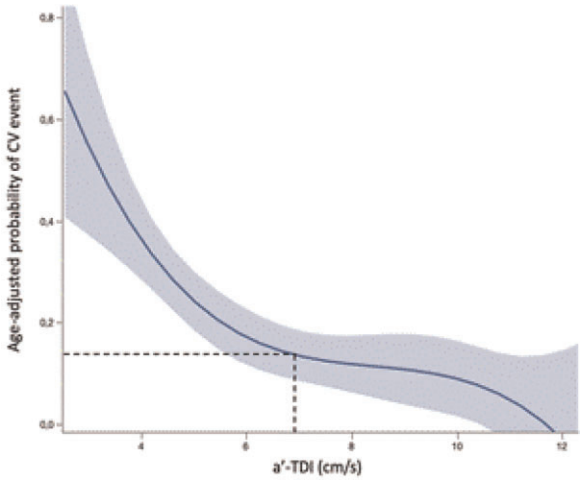
Aims: The impact of atrial function measured by standard and advanced echocardiographic techniques is emerging in various clinical settings but remains poorly explored in patients with hypertrophic cardiomyopathy (HCM).
Methods and results: Consecutive patients with HCM referred to the heart failure outpatient clinic were prospectively enrolled. Complete clinical and echocardiographic evaluation was performed, including fully automated 2D speckle tracking analysis software (AutoStrain, TomTec). Atrial function was assessed by means of left atrial (LA) volume, LA diameter, a'-TDI, and global peak atrial longitudinal strain (PALS). The primary endpoint was a composite of cardiovascular (CV) events (cardiovascular death or hospitalization, new-onset atrial fibrillation, surgical myectomy,

sustained ventricular tachycardia or ventricular fibrillation) during the follow-up. A total of 40 patients with confirmed HCM diagnoses and complete follow-up were included, mean age was 61 ± 14 years, 62% male, ejection fraction 64 ± 8%. LA was frequently enlarged (indexed LA volume 43 ± 14 ml/m^2, LA diameter 39 ± 7 mm), and dysfunctional (a'-TDI 7.1 ± 2.2 cm/s, PALS 21 ± 7%). During a mean follow-up of 460 ± 300 days, seven patients had a CV event. Among LA parameters, septal a'-TDI seems to characterize patients with events the most (5.5 ± 2.1 vs. 7.5 ± 2.3, $P = 0.03$). This was confirmed in an age-adjusted survival model [HR: 0.62 (0.39-0.92), $P = 0.03$]. The spline curve in the Figure illustrates the relationship between a'-TDI and the age-adjusted probability of CV events; the association began at about 7 cm/s and increased steeply for lower values. Of note, the association between PALS and CV events was highly significant in younger patients (<70 years, $P < 0.001$).
Conclusions: According to our pilot study, a'-TDI can be considered a simple, feasible, and routinely available parameter of left atrial function, which can help to identify HCM patients at higher risk of CV events.



322 Figure Spline model illustrating the risk of CV events by a'-TDI value in HCM.