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Atrial Function Assessment in High-Risk Hypertrophic Cardiomyopathy

LETTER TO THE EDITOR

To the Editor,

We read with great enthusiasm a report of left atrial (LA) dysfunction as a marker of arrhythmic events in hypertrophic cardiomyopathy (HCM) by Candan et al.[1] The authors investigated various clinical risk factors especially LA parameters, by speckle tracking echocardiography to predict appropriate implantable cardioverter defibrillator (ICD) shock in patients who underwent ICD implantation for hypertrophic cardiomyopathy. We appreciate the effort of the writers in exploring potential risk factors of arrhythmic events aside from the existing hypertrophic cardiomyopathy risk-sudden cardiac death (HCM risk-SCD) score since the HCM risk score has several limitations in predicting an adverse event in a patient with HCM.[2]

The authors concluded that peak atrial longitudinal strain (PALS) was predictive of appropriate ICD therapy in patients with HCM Risk-SCD score >6% in a certain risk group, in line with the findings of HCM left ventricle (LV) fibrosis correlation with LA fibrosis and scar by magnetic resonance imaging.[3] We believe that several issues need to be addressed.

Implantable cardioverter defibrillator shockable rhythm commonly originates from the ventricle; however, this study does not state that the mechanism underlying worsening LA function induces the emergence of ventricular arrhythmia. Readers may wonder whether LA dysfunction is related to LV structural changes or decreased LV function that might be detected from echocardiography prior to the onset of ventricular arrhythmia, where global longitudinal peak strain was already lower in the ICD therapy(+) in all groups. Readers may also wonder whether this LA dysfunction is associated with the new onset of atrial fibrillation, which may have contributed to the patient's arrhythmic events at follow-up. A study by Debonnaire et al[4] has proven the correlation between increased LA parameters, including strain, and the development of atrial fibrillation; however, this is not a shockable rhythm of ICD.

Several previous studies have demonstrated the association of LA strain with adverse events in HCM.[5,6] However, the normal reference values of LA strain vary.[7,8] Compared to the previously published normal reference range, all included patients in this study had a decreased LA strain. Hence, authors should provide a clear cut-off of PALS, which clearly predicts arrhythmic events and may benefit from prophylactic medical treatment in high-risk HCM.

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