Correspondence

Letter by Aquaro et al Regarding Article, "Intermediate-Signal-Intensity Late Gadolinium Enhancement Predicts Ventricular Tachyarrhythmias in Patients With Hypertrophic Cardiomyopathy"

To the Editor:

We have read with interest the article by Appelbaum and colleagues published in *Circulation: Cardiovascular Imaging*.[1] The authors performed cardiac magnetic resonance with late gadolinium enhancement (LGE) in 145 patients with hypertrophic cardiomyopathy. The regions of LGE were manually contoured and subdivided by the measurement of signal intensity as intermediate intensity LGE and high-intensity LGE. The authors found greater amounts of both intermediate LGE and high LGE in patients with hypertrophic cardiomyopathy with ventricular arrhythmias (nonsustained ventricular tachycardia, ventricular couplets, and premature ventricular contractions) than patients without these arrhythmias. Moreover, in patients with hypertrophic cardiomyopathy with ventricular arrhythmias, the extent of intermediate LGE exceeded that of high LGE. Finally, at receiver operating characteristic analysis, intermediate LGE was a better discriminator of patients with nonsustained ventricular tachycardia than was high LGE.

Results described by Appelbaum and colleagues reproduce the findings of a study published in 2010 by our team.[2] Using a similar method of image analysis, we subdivided LGE in areas of mild and higher enhancement in 100 patients with hypertrophic cardiomyopathy. We found that both mild and higher enhancement were associated with arrhythmic events and at receiver operating characteristic analysis, mild enhancement showed the higher sensitivity on predicting the occurrence of nonsustained ventricular tachycardia.

Taken together results of these studies reinforce our hypothesis that myocardial voxel with intermediate signal intensity at LGE is probably constituted by viable myocardium surrounded by scar. This microscopic scar may be a marker of plexiform fibrosis, which is usually associated with fiber disarray and thus potentially more arrhythmogenic than gross scarring. However, both the mentioned studies demonstrated only that mild or intermediate enhancement was a predictor of ventricular arrhythmias at Holter electrocardiographic monitoring. Then, further long-term studies are needed to evaluate the prognostic impact of LGE with mild or intermediate enhancement in hypertrophic cardiomyopathy.

Disclosures

None.

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