Takotsubo cardiomyopathy is a syndrome that was reported in Japan for the first time in the world. The term “takotsubo” is derived from the Japanese name for an octopus trap, because of the resemblance to this shape of the apical ballooning configuration of the left ventricle (LV) during systole in this disorder. The clinical characteristics of takotsubo cardiomyopathy resemble those of acute myocardial infarction (AMI), but with no evidence of obstructive coronary artery disease, and the condition is generally characterized on echocardiography by transient systolic dysfunction of the apical and/or mid segment with compensatory hypercontraction of the basal segment of the LV. Takotsubo cardiomyopathy has been reported to account for 1% of admissions for suspected AMI in Japan over the past decade. The pathogenesis of this cardiomyopathy is not yet clear, and the onset of this disorder is frequently, but not always, triggered by intense emotional or physical stress. Therefore, this cardiomyopathy has also been referred to as stress-induced cardiomyopathy.

LGE has occasionally been reported to be present also in cases of takotsubo cardiomyopathy (eg, in a report in which a lower threshold was used as a positive criterion for LGE (ie, >3 SD above the mean signal intensity of remote myocardium) (Figure 2). LGE is also useful in the differential diagnosis of takotsubo cardiomyopathy, which is generally characterized by patchy LGE, and myocarditis. In addition, myocardial edema is detected by T2-weighted imaging in most cases of takotsubo cardiomyopathy, although this finding is not specific to this disorder, and has also been recognized in AMI and acute myocarditis. Furthermore, 81% of patients who are LGE-positive show patchy LGE, corresponding to the region of wall motion abnormality. Also, ventricular thrombi can be identified by CMR, but may not be detected by echocardiography.

Thus, CMR is reported to be useful for morphological diagnosis and functional evaluation, and also for tissue characterization of the ventricular wall. However, the prevalence of LGE positivity and the characteristics of the signal intensity of LGE on CMR have not yet been clarified.

In this issue of the Journal, a study conducted by Nakamori et al found a prevalence of LGE in patients with takotsubo cardiomyopathy of 10% when analyzed by the number of segments, and 22% when analyzed by the number of patients. Furthermore, the contrast-to-noise ratio was significantly lower than that in AMI, and a threshold of 4SD above the mean of remote normal myocardium was useful for distinguishing takotsubo cardiomyopathy from AMI with a sensitivity of 100% and specificity of 94%. The results of this study should be reconfirmed in large-scale prospective studies, but the new horizon seen from this study is considered to be useful. In past reports of the diagnosis of takotsubo cardiomyopathy by CMR, only the presence and distribution pattern of LGE were discussed. However, the results of the present study show that measurement of the strength of the signal intensity of the LGE may have important implications in the diagnosis of takotsubo cardiomyopathy. From this viewpoint, this study is very important.

In addition, a study of 256 cases of takotsubo cardiomyopathy was published and became the topic of last year. That study was based on the database of a CMR registry maintained in European counties (UrCMR Registry). Though a little too late, a similar CMR registry is planned.
in Japan (Japan CMR Registry). It is believed that the day will come soon when the clinical characteristics and CMR findings of Japanese patients with takotsubo cardiomyopathy will begin to be investigated.

References