**Supplemental material**

**Preliminary investigation to set a cut-off value of the MSR on T2W-STIR-BB images**

**Methods:**

Firstly, we conducted a preliminary investigation to determine a normal value of MSR. Of the patients who underwent CMR at Hospital A between January 1, 2013 and August 31, 2016, those who demonstrated an LVEF above 60%, no abnormal findings in LGE, and no morphological or ventricular wall motion abnormalities were examined. Of these, we identified those who were clinically diagnosed with myocardial diseases that have been reported to show diffuse high signal intensity on T2W-STIR-BB images, which were, cardiac amyloidosis, myocarditis, hypertrophic cardiomyopathy, or Takotsubo cardiomyopathy. The rest of the patients were recruited as controls. MSR of the disease group and the control group were compared. The cut-off value of the MSR was defined according to the mean plus 2 standard deviations of the MSR of the control cases. The diagnostic performance of MSR for identifying myocardial diseases that show diffuse high signal intensity on T2W-STIR-BB images was examined.

**Results of preliminary investigation to set a cut-off value of MSR**

Of the 376 patients who underwent CMR between January 1, 2013 and August 31, 2016, 33 patients demonstrated an LVEF of 60% or higher, no abnormal LGE, and no morphological or ventricular wall motion abnormalities. Of these, 11 patients (age 67.9 ± 12.7, 5 males） were clinically diagnosed with myocardial diseases that have been reported to show diffuse high signal intensity on T2W-STIR-BB images, which were, hypertrophic cardiomyopathy (6 patients), Takotsubo cardiomyopathy (3 patients), hyper-eosinophilic myocarditis (1 patient), and cardiac amyloidosis (1 patient). The other 22 patients (age 62.9 ± 15.9 years, 7 males) were recruited as controls. MSR values showed significant differences between the disease and control group; those of the disease group were significantly higher than those of the control (0.69 ± 0.10 vs. 0.48 ± 0.05, $P<.001$) (Supplemental

Figure). The cut-off value of the MSR was set at 0.58 according to the mean plus 2 standard deviation of the MSR of control cases. The sensitivity, specificity, accuracy, and positive and negative predictive values of diagnosing myocardial diseases were 90.9%, 100.0%, 97.0%, 100.0%, and 95.7%, respectively. With confirmation of the high diagnostic performance of MSR, a cut-off value of MSR of 0.580 was used for evaluation of the localized hyperintensity on T2W-STIR-BB images of our CS cohort.