Abstract: P1806

Diagnosis of isolated cardiac sarcoidosis using FDG-PET/CT on the basis of new guidelines

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Introduction: Sarcoidosis is a systemic inflammatory disease which can involve any organs. The reported prevalence of isolated cardiac sarcoidosis (CS) varies widely because of the lack of an agreed definition of isolated CS (iCS). ICS was newly defined in the new guidelines for CS by Japanese Circulation Society.

Purpose: We aimed to examine the diagnostic accuracy of 18F-FDG PET/CT and the ratio of iCS in the whole CS by reviewing the patients with suspected CS undergoing the whole-body and cardiac FDG PET/CT scans.

Methods: We retrospectively reviewed 74 consecutive patients undergoing 18F-FDG PET/CT from 2013 to 2018 (mean age 60±14 years, 37 male) without the initiation of corticosteroid. Myocardial FDG uptake in CS was defined as a "focal" or "focal on diffuse" pattern. Systemic sarcoidosis (sCS) and iCS were diagnosed according to guidelines for the diagnosis and treatment of CS by Japanese Circulation Society. In short, iCS was diagnosed clinically when no clinical findings of sarcoidosis in any other organs and FDG uptake in heart were shown in addition to the following three of four criteria: high-grade atrioventricular block or fatal ventricular arrhythmia, structural abnormality, left ventricular contractile dysfunction, and delayed Gadolinium enhancement of myocardium on MRI.

Results: Of 31 patients with extra-cardiac sarcoidosis, 10 already met the diagnostic criteria of sCS before undergoing 18F-FDG PET/CT and 11 was newly diagnosed as sCS after FDG PET/CT. Of the remaining 43 without extra-cardiac sarcoidosis, 18 had FDG uptake in heart. Of 18 with FDG uptake in heart, iCS was diagnosed in 7, and sCS in 3 with extra-cardiac uptake of FDG as well as myocardium. Finally, 24 and 7 patients met the criteria of sCS and iCS based on the guideline, respectively. The sensitivity, specificity, accuracy, positive predictive value, and negative predictive value of FDG PET/CT for CS including sCS and iCS were 90, 87, 88, 85, and 92%, respectively.

Conclusion: The ratio of iCS on the basis of new guidelines for diagnosis and treatment of CS was 22% of the whole CS.