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ROLE OF ^{18}F-FLUORODEOXY GLUCOSE POSITRON EMISSION TOMOGRAPHY IN PATIENTS WITH CARDIAC SARCOIDOSIS ON LONG-TERM CORTICOSTEROID TREATMENT

Moderated Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Potential Ways to Improve Myocardial Function with Pre-Existing Therapies
Abstract Category: 23. Pericardial/Myocardial Disease
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Background: 18F-fluorodeoxy glucose (18F-FDG) positron emission tomography (PET) correlates with histologic activity of sarcoidosis, and is more sensitive for the detection of active sarcoid lesions in patients with suspected cardiac sarcoidosis (CS) compared to gallium-67. However, role of 18F-FDG PET on long-term follow-up is not well understood in CS.

Methods: We investigated 18F-FDG PET under fasting condition over 18 hours in 17 patients with CS who have been treated with corticosteroids for more than 5 years (mean 94 months: 66 to 180 months). All patients also underwent 99mTc-sestamibi myocardial single photon emission computed tomography (SPECT) and compared to PET. The SPECT images of myocardial perfusion were visually compared with that of 18F-FDG uptake. An area with reduced perfusion of 99mTc-sestamibi and enhanced 18F-FDG uptake accumulation was interpreted as suggestive of active inflammation. Nine of the 17 patients received pacemaker therapy, and the other 8 underwent gadolinium-enhanced cardiac magnetic resonance imaging.

Results: Twelve patients of the 17 (71%) showed no abnormal uptake of 18F-FDG in the myocardium (Group A), and reduced maintenance dose of corticosteroids. Four of the 10 patients planned to stop prednisone. The other 5 (29%: Group B) showed significant 18F-FDG uptake in the left ventricle (LV) including diffuse uptake in one and uptake localized in the basal portion in 4, who did not reduce prednisone. There were no significant differences in New York Heart Association (NYHA) function class, brain natriuretic peptide (BNP), echocardiographic variables, and high-sensitive troponin T between group A and B.

Conclusions: To reduce or stop corticosteroids, 18F-FDG PET provides useful information for CS patients on long-term corticosteroid treatment. However, 18F-FDG uptake in the basal site frequently involved by sarcoidosis is observed in one-fourth of CS, and not easy to be differentiated from physiological uptake commonly seen in healthy subjects.