ACC.14
TCT@ACC-i2 | innovation in intervention

A1018
JACC April 1, 2014
Volume 63, Issue 12

Non Invasive Imaging

LEFT VENTRICULAR F-18 FLUORODEOXYGLUCOSE UPTAKE ASSOCIATED WITH MYOCARDIAL AUTONOMIC DYSFUNCTION IN PATIENTS SUSPECTED WITH CARDIAC SARCOIDOSIS

Poster Contributions
Hall C
Saturday, March 29, 2014, 10:00 a.m.-10:45 a.m.

Session Title: Cardiac Positron Emission Tomography: Current and Newer Applications
Abstract Category: 16. Non Invasive Imaging: Nuclear
Presentation Number: 1101-29

Authors: *Keiichiro Yoshinaga, Hiroshi Ohira, Ichizo Tsujino, Chietsugu Katoh, Katsuhiko Kasai, Yuuki Tomiyama, Takahiro Sato, Noriko Oyama-Manabe, Masaharu Nishimura, Nagara Tamaki, Hokkaido university, Sapporo, Japan*

Background: The clinical manifestation of the cardiac sarcoidosis (CS) is mainly associated with arrhythmia and heart failure. Underlying cardiac autonomic dysfunction and inflammation may play a role for these events. However, the association between the autonomic dysfunction and cardiac inflammation has not been studied. The aim of this study was to evaluate LV 18F fluorodeoxyglucose (FDG) PET/CT uptake and cardiac autonomic function measured by 11C hydroxyephedrine (HED) PET/CT in sarcoidsis patients suspected with CS.

Methods: Eleven biopsy proven sarcoidosis patients suspected with CS based on the abnormal findings with either electrocardiography or echocardiography (age 61.6±11.2 y) underwent fasting 18F FDG PET/CT. These patients and 9 controls had 11C HED PET/CT. Left ventricle (LV) wall was divided into 17 segments. Regional FDG uptake was defined as positive if the regional uptake was focal pattern. Whole LV and regional HED uptake was quantitatively assessed using retention index. LV ejection fraction (EF) was evaluated by cardiac magnetic resonance or echocardiography.

Results: Patients with suspected CS showed preserved LVEF (65.9±11.8%). These patients showed significantly reduced global LV HED retention index compared to control (0.10±0.05 vs. 0.16±0.029 %/min, P=0.01). Five out of 11 patients with positive FDG uptake showed significantly reduced global HED retention index compared with 6 patients with negative findings on FDG-PET (0.070±0.034 vs. 0.13±0.047 %/min, P=0.04). However, there was no significant difference in HED retention index between the segments with focal FDG uptake (N=24) and negative FDG uptake (0.069±0.029 vs. 0.071±0.033 %/min, P=0.79)

Conclusions: Sarcoidosis patients with suspected CS showed global LV autonomic dysfunction even though their LVEF was preserved. Moreover, the patients with focal 18F FDG uptake showed significant autonomic dysfunction in global LV as compared with those negative FDG uptakes. These findings may imply the association between the cardiac inflammation and autonomic dysfunction in sarcoidosis patients suspected of having cardiac involvements.