



Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

CARDIAC DIFFUSION WEIGHTED IMAGE IN PATIENTS WITH CARDIAC SARCOIDOSIS: COMPARISON TO 18F-FLUDEOXYGLCOSE PET

Poster Contributions

Poster Hall, Hall C

Sunday, March 19, 2017, 9:45 a.m.-10:30 a.m.

Session Title: Non Invasive Imaging: MR Structure and Valvular Heart Disease

Abstract Category: 29. Non Invasive Imaging: MR

Presentation Number: 1290-215

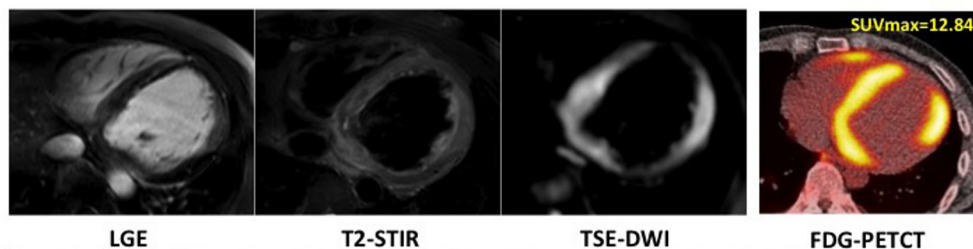
Authors: *Kenji Fukushima, Yasuhiro Goto, Michinobu Nagao, Mitsuru Momose, Masami Yoneyama, Yamato Shimomiya, Naoki Serizawa, Eri Watanabe, Nobuhisa Hagiwara, Shuji Sakai, Tokyo Women's Medical University, Tokyo, Japan*

Background: This study was to evaluate the feasibility of detecting myocardial active inflammation in patients with cardiac sarcoidosis (CS) using cardiac diffusion weighted image (DWI).

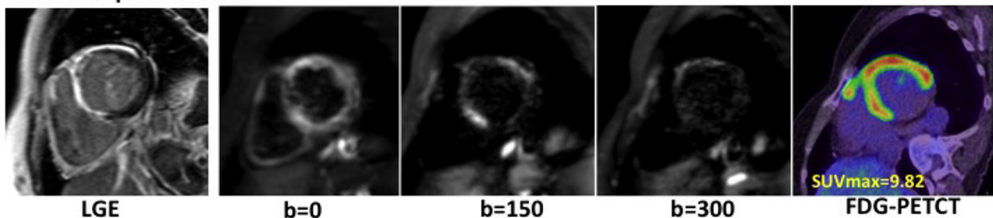
Methods: 10 patients (age 61 ± 10 , male 6) who underwent both DWI and ^{18}F -Fludeoxyglucose PET (FDG) were enrolled. After conventional cardiac 3T-MRI scan including LGE, low b value DWI with single-shot Turbo Spin Echo by peripheral pulse gating was performed. B factor was set as 0, 150, and 300. Visual analysis (invisible, equivocal, and visible) on each b value was done and patient with persistent visible myocardium at $b=300$ was defined as positive DWI. FDG was performed with low-carbohydrate diet protocol and 50 units/kg of heparin administration. FDG uptake of Whole heart was measured as whole myocardial SUVmax. Mid-level of short axis DWI images were divided into segments (anterior, septal, inferior, lateral wall) and were compared to segmental SUVmax in FDG.

Results: Four patients were under corticosteroid therapy out of total. DWI was positive in 4 patients. Whole myocardial SUVmax was significantly higher in DWI positive patients compared to those without (10 ± 3.7 vs 3.9 ± 2.5 , $p=0.001$). In segmental analysis, visible segments at $b=300$ showed significant higher segmental SUVmax compared to invisible (9.7 ± 3.9 vs. 2.2 ± 2.7 , $p=0.012$).

Conclusions: DWI has a potential to visualize active inflammation in CS and discriminate scarring myocardium in routine evaluation by cardiac MRI.



Case with positive DWI



Case with negative DWI

