The imaging characteristics of extrapulmonary tuberculous lesions on dual time point imaging (DTPI) of FDG PET/CT.

ABSTRACT

INTRODUCTION: This study aimed to evaluate the diagnostic value of dual time point imaging (DTPI) of 18F-fluorodeoxyglucose (FDG) positron emission tomography/CT (PET/CT) for detecting the infective lesions in patients with extrapulmonary tuberculosis (EPTB). METHODS: Eleven patients were consecutively recruited and evaluated. After the intravenous injection of 369 ± 153 MBq of FDG, all patients underwent FDG PET/CT imaging at two different time points: early scan at 57 ± 23 min and delayed scan at 136 ± 42 min. The maximum standardized uptake values (SUVmax) were recorded for both time points (early scan: SUVmax1 and delayed scan: SUVmax2). RESULTS: In total, 30 lesions were detected. The SUVmax2 in 22 of the lesions in confirmed EPTB patients were significantly higher than the SUVmax1 (7.9 ± 3.2 vs. 6.8 ± 2.5; P = 0.001). The SUVmax for another eight non-EPTB lesions also showed a significant increasing pattern of change (6.2 ± 2.6 vs. 6.5 ± 2.8; P = 0.044). However, there was insignificant difference between the mean percentage difference of SUVmax (%ΔSUVmax) of EPTB and non-EPTB lesions (P = 0.06). CONCLUSION: Our study demonstrates that early whole body PET/CT imaging may be sufficient for the detection of the EPTB lesions and DTPI of PET/CT may also not be a useful technique in differentiating between EPTB and non-EPTB lesions. However, our findings are based on a limited number of patients, and therefore, further investigations in larger series of patients are warranted.

Keyword: Dual time point imaging; Extrapulmonary tuberculosis; PET/CT.