

FDG-PET-CT in Early Detection of Cardiac and Extra-Cardiac Complications of Infective Endocarditis

Orvin, Katia¹; Goldberg, Elad²; Bernstein, Hana³; Groshar, David³; Sagie, Alexander¹; Battler, Alexander¹; Bashara, Jihad²

¹Rabin Medical Center-Belinson Hospital, Cardiology, Petah Tikva, Israel; ²Rabin Medical Center-Belinson Hospital, Infectious Diseases, Petah Tikva, Israel; ³Rabin Medical Center-Belinson Hospital, Nuclear Medicine, Petah Tikva, Israel

Background: The exact incidence of extra-cardiac complications (ECC) in patients with infective endocarditis is unknown but presumed to be high. These patients, although mostly asymptomatic, may require a different therapeutic approach. Different imaging modalities are being used for the diagnosis of ECC, but none of them can provide a complete diagnostic image. FDG-positron emission tomography- CT (FDG-PET-CT) has been used in diagnosis of endocarditis, pacemaker related endocarditis and other endovascular infections, but its role in the early diagnosis of ECC still unknown. Aim: To prospectively evaluate the yield of FDG-PET-CT in early diagnosis of ECC in infective endocarditis.

Methods: A prospective cohort study. Patients with diagnosis of definite infective endocarditis (according to modified Duke's criteria) were included and underwent FDG-PET-CT study within 7 days from it's diagnosis.

Results: 16 patients (9 men, age range 22-84), were included in our preliminary data. 6 patients had prosthetic valves (one TAVI) and 4 had an implantable device (ICD, CRT, and pacemaker). FDG-PET-CT demonstrated ECC in 7 (43.7%) patients and included among others: osteomyelitis, lung infection, psoas abscess and line infection. Out of 14 cases with typical echographic endocarditis findings (including perivalvular abscess), only 2 cases (12.5%) were demonstrated by FDG-PET-CT. Treatment plan was altered according to the FDG-PET-CT findings in 6 (37.5%) patients (surgical procedures and prolongation of antibiotic therapy).

Conclusions: According to these preliminary results, FDG-PET-CT may be a useful diagnostic tool for early detection of ECC of infective endocarditis and limiting unnecessary studies and procedures. Interestingly, FDG-PET-CT shows low diagnostic yield for valvular endocarditis including perivalvular abscess.