

FDG-PET in infectious lesions: The detection and assessment of lesion activity

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The usefulness of FDG-PET in the detection of infectious foci and the assessment of lesion activity was evaluated. The study covered 24 patients with 25 FDG-PET studies, including lesions of bacterial, tuberculous and fungal origins. The FDG uptake was determined by the lesion to muscle ratio (LMR) on the static images. The time activity curves (TACs) were classified into four patterns based on both the existence of an initial peak and a slope thereafter. A high FDG uptake was observed in 23 of 25 lesions (92%). Two lesions, in which no abnormal uptake was noted, included one in the healing stage and the other consisting of a cavity with a thin wall. The acute active lesions showed higher LMRs than the chronic active or healing lesions (mean \pm SD: 9.8 ± 3.6 , 3.6 ± 1.8 and 4.3 ± 1.7 , respectively, $p < 0.05$), and they could be approximately distinguished by an LMR of 6. The patterns of the TACs in acute or chronic active lesions were either an increase without an initial peak or a plateau, while those in the healing lesions demonstrated predominantly an increase with an initial sharp peak. Our results indicated that FDG-PET is clinically useful in the detection of the infection of miscellaneous microorganisms as well as in the assessment of lesion activity.

Key words: ^{18}F -fluorodeoxyglucose, positron emission tomography, infectious disease, tuberculosis, abscess