Evolving role of FDG-PET in detecting and characterizing infectious and inflammatory disorders

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Background: Because of its ability to quantify the rate of 2-deoxy-2-[18F]fluoro-D-glucose (FDG) uptake, FDG PET/CT can provide valuable information related to the degree of inflammatory activity, its location and extension even before morphological changes may become evident. It is not surprising that the modality is being used as a diagnostic tool in a variety of infectious and inflammatory disorders.
Content: Due to its high sensitivity and whole-body approach, FDG PET has been used for detecting culprit lesions and/or evaluation of disease activity in systemic infections and inflammations, fever of unknown origin, chronic osteomyelitis, prosthetic joint infections, vasculitis, spinal infections, diabetic foot infections, inflammatory bowel disease (IBD), degenerative joint disease, active granulomatous diseases such as sarcoidosis, as well as in a variety of non-infectious/inflammatory or proliferative conditions such as radiation pneumonitis and post-lung transplant lymphoproliferative disorders. Novel PET radiopharmaceuticals for imaging infection and inflammation tracers are also being tested. The presentation reviews the current state of this very important application of FDG-PET imaging. Relevant FDG PET/CT and PET/MRI images showing the pattern of FDG uptake in common infectious and inflammatory disorders are also provided.
Conclusion: FDG-PET/CT imaging represents a perspective modality for evaluation of infectious and inflammatory disorders that can provide valuable information in the appropriate clinical setting.
Key words: Positron emission tomography, infection and inflammation imaging, fever of unknown origin, FDG.