Diagnostic Value of 68Ga PSMA-11 PET/CT Imaging of Brain Tumors-Preliminary Analysis.


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OBJECTIVE: To evaluate the feasibility of using Ga PSMA-11 PET/CT for imaging brain lesions and its comparison with F-FDG.

METHODS: Ten patients with brain lesions were included in the study. Five patients were treated cases of glioblastoma with suspected recurrence. F-FDG and Ga PSMA-11 brain scans were done for these patients. Five patients were sent for assessing the nature (primary lesion/metastasis) of space occupying lesion in brain. They underwent whole body F-FDG PET/CT scan and a primary site elsewhere in the body was ruled out. Subsequently they underwent Ga PSMA-11 brain PET/CT imaging. Target to background ratios (TBR) for the brain lesions were calculated using contralateral cerebellar uptake as background.

RESULTS: In five treated cases of glioblastoma with suspected recurrence the findings of Ga PSMA-11 PET/CT showed good correlation with that of F-FDG PET/CT scan. Compared to the F-FDG, Ga PSMA-11 PET/CT showed better visualization of the recurrent lesion (presence/absence) owing to its significantly high TBR. Among the five cases evaluated for lesion characterization glioma and atypical meningioma patients showed higher SUVmax in the lesion with Ga PSMA-11 than with F-FDG and converse in cases of lymphoma. TBR was better with Ga PSMA PET/CT in all cases.

CONCLUSION: Ga PSMA-11 PET/CT brain imaging is a potentially useful imaging tool in the evaluation of brain lesions. Absence of physiological uptake of Ga PSMA-11 in the normal brain parenchyma results in high TBR values and consequently better visualization of metabolically active disease in brain.

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