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F-18 FDG PET-CT in patients with recurrent glioma: Comparison with contrast enhanced MRI.

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Abstract

PURPOSE: The purpose of the study was to compare the efficacies of FDG PET-CT and contrast enhanced MRI in detection of recurrent gliomas.

METHODS: Ninety histopathologically proven glioma patients with clinical suspicion of recurrence were evaluated. All patients underwent FDG PET-CT scan and contrast enhanced MRI. Combination of clinical follow up, repeat imaging and biopsy (when available) was taken as gold standard.

RESULTS: Based on gold standard criteria, 59 patients were positive and 31 patients were negative for recurrence. Overall sensitivity and specificity of FDG PET-CT were 70% and 97% respectively whereas that for contrast enhanced MRI was 95% and 23%. FDG PET-CT also has higher accuracy (80%) as compared to MRI (70%). FGD PET-CT has lower sensitivity than MRI in all grades, except for Grade II gliomas where their sensitivities are comparable (95% and 90%). Very low specificity of MRI was observed in all grades of tumour (18-33%). In contrast the specificity of FDG PET-CT was high across all grades (83-100%).

CONCLUSION: FDG PET-CT is a highly specific modality for detecting recurrence in patients with gliomas and can effectively exclude post therapy changes.

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