Role of 18F-FDG PET/CT in the Detection of Ovarian Cancer Recurrence in the Setting of Elevated Tumor Markers.

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Abstract:

Objectives: To evaluate the diagnostic performance of 18F-flurodeoxyglucose positron emission tomography/ computed tomography in patients with suspected biochemical ovarian tumor recurrence in comparison to contrast enhanced CT. Patients and Methods: A total of 64 18FFDG PET/CT studies for patients with biochemical suspicious ovarian tumor recurrence were evaluated. Each patient underwent 18F-FDG PET/CT and Ce-CT scans in the same day. Studies were read independently by one experienced nuclear medicine physician and one experienced radiologist. A four-point score (score 0 = definitely benign, score 1 = probably benign, score 2 = probably malignant and score 3 = definitely malignant) used to assess the presence or absence of recurrence (local, regional or distant). The final diagnosis of tumor status was made on the basis of subsequent followup by 18F-FDG PET/CT, conventional imaging (CT/MRI) or histopathology whenever possible. Results: Of the 64 studies evaluated, 61 (95%) studies had tumor recurrence and 3 (5%) studies were free based on final diagnosis. 18F-FDG PET/CT & Ce-CT had sensitivity 97% vs. 87%, specificity 100% vs. 33%, and accuracy of (97% vs. 84%) respectively. 18F-FDG PET/CT was significantly more sensitive and more accurate compared to Ce-CT with P-value of 0.07 and 0.02; respectively with no statistical significant difference in accuracy. Conclusions: 18FFDG PET/CT is more accurate than Ce-CT in the diagnosis of ovarian tumor recurrence in patients with elevated tumor marker.

Keywords: ovarian cancer, elevated tumor markers, 18F-FDG PET/CT, recurrence.

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