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O-(2-18F-Fluoroethyl)-L-Tyrosine Positron Emission Tomography/Computed Tomography in Patients with Suspicious Recurrent Low and High-Grade Glioma

Authors : Mahkameh Asadi, Habibollah Dadgar

Abstract : The precise definition margin of high and low-grade glioma is crucial for choosing best treatment approach after surgery and radio-chemotherapy. The aim of the current study was to assess the O-(2-18F-fluoroethyl)-L-tyrosine (18F-FET) positron emission tomography (PET)/computed tomography (CT) in patients with low (LGG) and high grade glioma (HGG). We retrospectively analyzed 18F-FET PET/CT of 10 patients (age: 33 ± 12 years) with suspicious for recurrent LGG and HGG. The final decision of recurrence was made by magnetic resonance imaging (MRI) and registered clinical data. While response to radio-chemotherapy by MRI is often complex and sophisticated due to the edema, necrosis, and inflammation, emerging amino acid PET leading to better interpretations with more specifically differentiate true tumor boundaries from equivocal lesions. Therefore, integrating amino acid PET in the management of glioma to complement MRI will significantly improve early therapy response assessment, treatment planning, and clinical trial design.

Keywords : positron emission tomography, amino acid positron emission tomography, magnetic resonance imaging, low and high grade glioma
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