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Relevance Of Brain 18F-Fdg Pet Imaging In Nmda Encephalitis

Nora Estela Kerik Rotenberg

Instituto Nacional de Neurología y Neurocirugía, Mexico

Brain positron emission tomography (PET) associated with computed tomography (CT) using 18F-FluoroDeoxyGlucose (FDG) has played an important role in the pediatric population for the evaluation of epilepsy for many years. More recently, auto-immune encephalitis has been emerging as a potential new indication for brain PET imaging. To date, FDG PET brain studies have been almost exclusively performed in adults, the large majority as evaluation of paraneoplastic symptoms. The purpose of this presentation is to show the role of brain PET in a cohort of and young adults with acute encephalitis in comparison to conventional imaging and to identify, if possible, distribution patterns of brain anomalies associated with specific AE subtypes anti-NMDA. Anti-NMDAR encephalitis may be the most frequent autoimmune encephalitis (AIE) identified to date. AIE It is not a rare disease, and accounts for 15-20% of all encephalitis, and anti/NMDAR is approximately 80% of AIE. Clinical presentation is acute, with significant encephalopathy, seizures and neuropsychiatric symptoms, and neurologic complications. Timely and appropriate treatment is crucial for improving acute encephalitis outcome; hence, rapid identification of the cause is a determinant factor of future prognosis. Conventional imaging studies like computed tomography (CT) and magnetic resonance imaging (MRI) demonstrated limited values in the discernment of patients with anti NMDA encephalitis. Among neuroimaging modalities 18F-FDG-PET imaging has the unique ability to provide quantitative estimates of the local cerebral metabolic rate of glucose consumption (just as glucose, 18F-FDG is actively transported into the cell mediated by glucose transport proteins). Glucose hypometabolism measured on 18F-FDG-PET may indicate either less gray matter or synaptic dysfunction. Also, FDG-PET can be useful for assessing treatment response. The reversibility of the disorder suggests an immune mediated neuronal dysfunction rather than irreversible degeneration. 18F-FDG-PET/CT imaging as a direct index of synaptic functioning and density enables the clinician to detect ANMDAR Encephalitis accurately at its earliest stage and for assessment of early treatment response

Biography

Nora.E Kerik has her expertise in evaluation and passion in improving the health and wellbeing in nuclear neuroscience. Her open and contextual evaluation model based on responsive constructivists creates new metabolic patterns for improving molecular imaging with fdg-PET studies. She has built this model after years of experience in research, evaluation, and teaching both in hospital and education institutions regarding anti-NMDA encephalitis.

drkerik@hotmail.com