

Atypical parkinsonian tauopathies – different diseases?

P. Alster¹, M. Nieciecki³, D. Koziorowski¹, I. Charzyńska³, L. Królicki^{2,3}, A. Friedman¹

¹Neurology, Medical University of Warsaw, Poland

²Nuclear Medicine, Medical University of Warsaw, Poland

³Nuclear Medicine, Mazovian Bródno Hospital, Poland

Progressive supranuclear palsy (PSP) and corticobasal degeneration (CBD) share a nearly half century history. Latest guidelines show limited possibilities of neuroimaging examination such as metabolic positron emission tomography, dopaminergic assessment in single photon emission computed tomography (SPECT) and magnetic resonance imaging. The context of perfusion SPECT was not brought up in both criteria. The aim of this work was to assess whether PSP and CBD significantly differ in the context of cerebral perfusion. In the study 35 patients were examined (21 patients with probable PSP-Richardson-Steele-Olszewski /Parkinson like syndrome and 14 patients affected by CBD with corticobasal syndrome clinical manifestation). Each patient was examined using hexamethyl propylene amine oxime (^{99m}Tc-HMPAO) as a radiotracer in SPECT. 94 regions of interest (ROI) disseminated in the cerebrum were assessed in the context of perfusion and compared with healthy population. The outcome of the study revealed significant hypoperfusion in the thalamus bilaterally in CBD and PSP. Most other ROIs were not significantly affected by hypoperfusion. Perfusion in ROIs was subsequently analyzed using U-Mann-Whitney test, which showed significant differences of perfusion in 30 out of 94 locations, however most of them were affected by insignificant level of hypoperfusion. The test showed significant difference of perfusion in the thalami. Higher level of hypoperfusion was observed in PSP. However when analyzing standard deviations, the spectrum of perfusion of PSP and CBD in the thalami was overlapping. Taking into account the close association between PSP and CBD in clinical manifestation, the similarity of perfusion of CBD and PSP brings another issue questioning PSP and CBD as separate entities.