ARE THERE DIFFERENCES OF LOSS OF DOPAMINERGIC NEURONS BETWEEN IDIOPATHIC PARKINSON DISEASE WITH DEMENTIA AND WITHOUT DEMENTIA? A FP-CIT PET STUDY

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Introduction: Dementia occurs in 40-70% of patients with idiopathic Parkinson disease (IPD) during the course of their illness. Although there are several studies about correlation between the severity of motor dysfunction in IPD and reduction in dopamine transporters (DAT) levels using 123I-FP-CIT PET, there is no study about correlation between nigro-striatal dopaminergic dysfunction by using DAT and the severity of cognitive dysfunction in IPD. We evaluated the differences of regional DAT density of brain between IPD without dementia and IPD with dementia using FP-CIT PET.

Method: We recruited 24 consecutive patients with IPD and 18 age-matched healthy controls. Of these 24 patients with IPD, 7 subjects were IPD without dementia and 17 subjects were IPD with dementia. The diagnosis of IPD was made according to UK Parkinson's Disease Society Brain Bank Clinical Diagnosis Criteria and dementia according to DSM-IV Dementia Criteria. All subjects underwent FP-CIT PET study according to standard procedure. Scans usig FP-CIT PET were acquired on 1 hour and 3 hour after the FP-CIT injection.

Results: DAT density in both caudate nucleus and putamen, which was measured at 1 hour and 3 hours after FP-CIT injection, showed no significant differences between patient with IPD without dementia and those with dementia.

Conclusion: We cautiously insist that there is no relationship between DAT density and cognitive severity. We also found out no relationship between DAT levels of striatum and motor severity of IPD, because there are no significant differences between IPD with mild motor dysfunction and IPD with severe motor dysfunction.