LRRK2 G2019S mutation do not have a significantly different neurocognitive profile compared to mutation negative PD.

Th-214

CSF biomarkers of AD in PD patients with and without cognitive impairment suggest a subset with concomitant AD

A. Siderowf, J.E. Duda, S.X. Xie, L.M. Shaw, D. Weintraub, S.T. Moelter, P.J. Moberg, E. Rosenfeldt, M. Diloyan, J.Q. Trojanowski, H.I. Hurtig, C.M. Clark (Philadelphia, Pennsylvania)

Objective: To determine if established CSF biomarkers of AD pathology could detect the presence of co-existing AD pathology in a subset of PD patients with and without cognitive impairment.

Background: Up to 80% of elderly patients with Parkinson's disease (PD) develop meaningful cognitive impairment. The clinical profile is dominated by reduced cognitive processing speed and other measures related to subcortical and frontal lobe impairment. Decreased memory and cognitive functions that overlap with domains typically associated with AD may also be impaired. Additional overlap of these two late-life neurodegenerative conditions is documented by the co-existence of pathologic aggregations of synuclein, neuritic plaques, and hyperphosphorylated tau in as many as 2 out of 3 patients with Parkinson's disease and dementia.

Methods: Standardized clinical evaluations, including cognitive assessments and lumbar spinal fluid analysis were performed in 83 subjects; 38 PD, 7 PD dementia (PDD), and 38 elderly controls, participating in a longitudinal study of biomarkers of late-life neurodegenerative dementia.

Table (Th-214).

	PD	PDD	Control
N	38	7	38
Age*	71 (7.3)	77 (7.5)	71 (10.0)
UPDRS-motor score*	22 (10.2)	30 (7.9)	3 (5.4)
MMS*	28 (1.7)	22 (2.6)	29 (1.0)
DSM*	138 (4.3)	116 (6.5)	139 (6.1)

*Mean (SD)

CSF levels of total tau, p-taup181 and β-amyloid42 were determined using x-MAP Luminex technology.

Results: Applying neuropathologically confirmed AD diagnostic CSF threshold values to the biomarkers in the PD subjects revealed that 31% had a CSF Aβ42 level that was <192 pg/mL (consistent with a biomarker diagnosis of AD). The proportion was lower for p-tau181 and t-tau.

Table (Th-214).

	N (%)
Aβ42 pg/mL	14 (31%)
p-tau 181 pg/mL	10 (22%)
t-tau pg/mL	4 (9%)

There was no consistent relationship between the biomarker levels and global measures of cognitive function (DSM, MMS).

Conclusions: In an overwhelmingly non-demented cohort of PD patients, CSF Aβ42 levels associated with the diagnosis of AD was found in roughly one-third of PD patients. Global measures of cognitive function did not correlate with this finding, suggesting it may be possible to detect the presence of co-existing AD pathology in patients with PD prior to the expression of global cognitive impairment as measured by standard clinical tools. Expanding the study cohort, longitudinal follow-up, and the detection of amyloid using newly developed PET ligands may provide additional information.

Th-215

Three-dimensional analysis of gait of patients with Parkinson's disease during the accomplishment of the dual task

D. Speciali, E. Oliveira, P. Lucareli, F. Pereira, N. Santos, A. Fracini (Sao Paulo, Brazil)

Objective: The aim of this study was investigate the motor-cognitive dual task performance in Parkinson's disease patients during the gait.

Background: It is known that in Parkinson's disease (PD) occurs the depletion of the nigroestriatais neurons, producing of dopamina, causing loss of automatism of the movement. The Dual Task (DT) is prerequisite for a normal life since it allows the individual to walk and to direct its attention for motor and cognitive tasks.

Methods: Group PD (GPD) was composed for 14 patients, with DP Idiopatic with score between 2 and 3 in the scale of Hoehn & Yahr; control group (CG) had 9 subjects; both the groups had that to have a MMSE ≥24. For three-dimensional analysis of the gait System FALCON–Motion Analysis® was used. The angular and linear kinematics in two conditions were evaluated: Normal gait (NG), that is, without the DT and gait 500 (G500), where the individual was submitted to the one has tested arithmetical regressive (500–7). For statistics analysis used Mann Whitney test and Wilcoxon test.

Results: During the DT the GDP showed a lower step and stride length, increase in cadence. For cinematic angle during the M500 in the GDP reduction of pelvic anteversion, increased knee flexion during support and reduction of the angular plantar flexion movement in ankle during the gait cycle.

Conclusions: DT changed the kinematics and linear parameters compared to control group.

Th-216

Working memory and emotional face processing in Parkinson's disease

L. Subramanian, M.C. Jackson, J.J. Vattakatuchery, D.E.J. Linden, J.V. Hindle (Bangor, Wales, United Kingdom)

Objective: We aimed to study visual working memory for faces with emotional expressions (angry, happy, neutral, sad and fearful) and also the ability to identify, rate intensity, arousal and valence of the emotions (disgust and surprise along with the other emotions) in PD patients on and off medication.

Background: Studies have shown that some patients with Parkinson's disease (PD) have difficulty identifying emotions of anger, fear and disgust.

Methods: Task 1. A visual working memory task was used–the subject was to remember and then recall the identity of faces with emotional expressions. Task 2. Faces with different emotional expressions were presented–the subject was to identify the emotion, state the intensity, arousal and valence of the emotion. 22 PD patients(fulfilling the UK PD Brain bank criteria) had carried out the above tasks on medication (Tasks 1b and 2b) and 20 of the same patients did the same tasks again while they were off medication (12 hours after last dose) (Task 2a and 2b). 22 age matched controls were included.

Results: Task 1. 1a. The visual working memory task showed that when off medication PD patients with a longer duration of illness seemed to be worse overall when compared to the controls but particularly for faces with expressions of anger, neutral and fear while those with a shorter duration of illness where as good as the controls except for neutral. 1b. When on medication PD patients with a longer duration of illness showed an improvement in their working memory for faces with expressions of anger, neutral and fear but were significantly worse remembering sad faces when compared to controls. Those with a shorter duration of illness were worse in their working memory for sad faces. Task 2a and b. Results from the face processing task showed that patients on and off medication had difficulty