Background: Cognitive impairment is a great challenge in patients with Parkinson's Disease (PD). We present a neuropsychological assessment in a PD population using a standardized battery based on Movement disorders Society recommendations.
Patients and methods: We evaluated extensively different cognitive domains (attention, memory, language, executive functions and processing speed) and depressive symptoms in a prospective cohort of PD patients in control in our center, using a standardized neuropsychological battery.
Results: Twenty five patients were included. Age (mean +/− SD) was 60.8 ± 11.7 years, 28% were females. PD evolution was between 2 and 15 years. Alterations in at least one neuropsychological test were present in 100% of subjects. Dementia was diagnosed in 18% of patients, whereas mild cognitive impairment was present in 36% of the cases. Dementia was present in 60% of those older than 70 years. MoCA test was affected in 80% of cases (Z: −2.6 ± 1.9). AVLT (Episodic auditive verbal memory) was altered in 84% of subjects (Z: −3,8 ± 2.0). BVMT (Visuospatial memory) was affected in 44% of patients (Z: −1.4 ± 0.9). Boston test (semantic memory) was altered in 40 subjects (Z:−1.1 ± 1.2). TMT-A (visual attention) was altered in 32% of cases (Z: 0.6 ± 2.4). Digit Span (Auditive attention) was affected in 32% of patients (Z: −0.4 ± 1.8). SDMT (Processing speed) was altered in 24% of cases (Z:-0.4 ± 1.0). FAS (cognitive alternancy) was affected in 28% of subjects (Z:−0.5 ± 1.4). The tower test of D-KEFS was altered in 20%, (Z:−0,5 ± 1.4). Depressive symptoms were present in 53% of patients.
Discussion: We found a high percentage of cognitive alterations in our PD population. Both verbal and visual episodic memory were affected in 50% of patients. As previously reported, older patients were more affected by dementia.

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Movement Disorders 1
Impulsivity, but not dopamine agonists, explains severity of impulse control disorders in PD

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Background: Impulse control disorders (ICDs) are frequently found in patients with PD treated with dopamine agonists. Despite their name, their relation with impulsivity is not well established.
Objetive: To analyze the relationship between the presence and severity of impulse control disorders (ICDs) in PD and impulsivity.
Methods: Prospective study of 93 consecutive non-demented PD patients. ICDs were assessed using the Questionnaire for Impulsive-Compulsive Disorders (QUIP) and Minnesota Impulsive Disorders Interview (MIDI), and impulsivity using the Barratt Impulsiveness Scale (BIS-11) and commision errors in Conners' Continuous Performance Test II (CCPT).
Results: Thirty-five percent of patients (33/93) presented ICD. Younger age ($p < 0.05$) and dopamine agonists use ($p < 0.05$) were associated with presence of ICD but not to severity ($p = 0.61$ and $p = 0.72$ respectively). Impulsivity, either self-reported (BIS-11) or estimated by CCPT, did not differ between patients with ICD and without. However, in patients presenting ICD impulsivity measures correlated with ICD severity ($p < 0.01$ for both measures). There was no relation between impulsivity and dopaminergic medication use. Dose of dopamine agonist was not associated with ICD. Other PD medications were also not associated. Multivariate analysis confirmed significant association between ICD severity and impulsivity ($p < 0.001$).
Conclusion: Age and dopamine agonist were associated with the presence of ICD, but not with their severity. Conversely, impulsivity was not associated with ICD presence but correlated with severity. This suggests a double dissociation, showing impulsivity as an independent variable explaining ICD severity in patients on treatment with dopamine agonists.

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Movement Disorders 1
Comparison between odor discrimination, substantia nigra echogenicity and nigrostriatal dopaminergic activity measured by 18F.PR04 pet in Parkinsonian syndromes

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Objective: To evaluate the relationship between odor discrimination, substantia nigra echogenicity and nigrostriatal dopaminergic activity in patients with Parkinson's disease.
Background: Positron emission tomography for imaging dopaminergic pathways, transcranial substantia nigra (SN) echogenicity and odor discrimination are used as complementary tools for the diagnosis of PD. However there is a lack of information about the relationship between these three diagnostic methods for helping in the diagnosis of PD.
Methods: Twelve patients with PD according to established criteria were prospectively included. All subjects underwent a dynamic PET scan (Siemens mCT) for a duration of 2 h after bolus injection of 165 ± 15 MBq (mean ± SD) [18F]PR04.MZ. Data analysis using noninvasive Simplified Reference Tissue Model (SRTM) method and Cerebellum as reference was performed for estimation of binding potential in different brain regions. Odor discrimination was evaluated by using sniffing stick test (hyposmia < 7 detections) and transcranial sonography of the SN was also conducted. Pathological echogenicity was considered as SN area more than 0.20 cm^2.

Study was approved by local and governmental authorities and participants signed informed consent.
Results: Age (mean +/− SD) was 56.8 +/− 13.9 years. Substantia nigra hyperechogenicity was found in 10 patients (SN area: 28.8 +/− 14.2). Hyposmia was observed in 6 cases (7.5 +/− 3 odors). PET analyses showed dopaminergic depletion in 11 patients. Percentage of Posterior putamen depletion was 66.0 +/− 29.2. Nine subjects with Dopaminergic depletion also exhibited SN hyperechogenicity. There was no relationship between SN area or olfaction detection and magnitude of dopaminergic depletion.
Conclusions: Evaluation of SN echogenicity and dopaminergic activity by 18FPR04.MZ PET are valuable tools in the diagnosis of PD. Larger studies are required to confirm these findings. SUPPORTED BY FONDECYT No. 11130534.

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