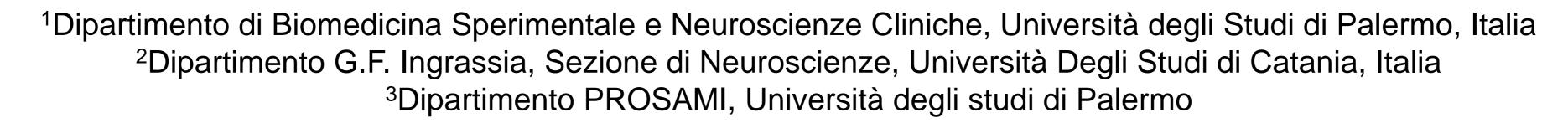# Frequency and Correlates of Subjective Memory Complaints in Parkinson's disease subjects with and without Mild Cognitive Impairment: the PArkinson's disease COgnitive impairment Study

R Baschi[1], A Nicoletti[2], V Restivo[3], A Luca[2], M Davì[1], M Zappia[2], B Fierro[1], R Monastero[1]

[1]Dipartimento di Biomedicina Sperimentale e Neuroscienze Cliniche, Università degli Studi di Palermo, Italia
[2]Dipartimento G.F. Ingrassia, Sezione di Neuroscienze, Università Degli Studi di Catania, Italia
[3]Dipartimento PROSAMI, Università degli studi di Palermo

Aims

Subjective memory complaints (SMC) may represent the preclinical phase of Mild Cognitive Impairment (MCI) due to Alzheimer's disease. Dementia/MCI have been described with high prevalence in Parkinson's Disease (PD), but whether SMC may predict the development of cognitive impairment has been scarcely explored. The aim of our study is to evaluate the frequency and clinical correlates of SMC isolated (PD-SMC) or within the construct of MCI in subjects with PD (PD-SMC-MCI).

Materials and Method

We included 147 consecutive PD patients from the PArkinson's disease COgnitive impairment Study (PACOS), a multicenter study involving two Movement Disorder Centers located in Southern Italy. Patients were diagnosed according to the Gelb's diagnostic criteria for PD. MCI in PD was diagnosed with level-II Litvan's specific guidelines for PD-MCI, including 2 specific cognitive tests for each of the following domain: episodic memory, language, attention and executive functioning. The Memory Assessment Clinics Questionnaire was used to assess SMC. PD severity was evaluated with the Unified Parkinson's Disease Rating Scale – Motor Evaluation (UPDRS-ME) and the Hoehn and Yahr (HY) scale. The basic Activities of Daily Living and the Instrumental Abilities of Daily Living were used to evaluate functional status in PD subjects. Logistic regression analysis adjusted for demographics and significant covariates was used to evaluate clinical differences between groups.

Results

Demographic, clinical and behavioural characteristics are shown in table 1. After the exclusion of 17 subjects with PD-MCI without SMC, the remained sample included 130 PD patients classified as follow: 40 (30.7%) individuals with PD-SMC, 48 (36.9%) with PD-SMC-MCI and 42 (32.3%) with PD without SMC and/or MCI (PDw). When compared to PDw, PD-SMC was significantly associated with anxiety (OR=4.47, 95% CI=1.20-6.68), while PD-SMC-MCI related to motor progression (OR=5.39, 95% CI=1.09-6.64), and instrumental disability (OR=8.59, 95% CI=2.30-32.08). When comparing PD-SMC vs PD-SMC-MCI the latter was significantly associated with instrumental disability (OR=3.42, 95% CI=1.53-7.69) (Table 2).

	PDw	PD-SMC	PD-SMC-MCI	p
Age (yrs)	63.4 (9.5)	68.1 (7.9)	70.7 (9.1)	<0.001
Education (yrs), median (range)	8 (5-13)	8 (5-13)	5 (4-8)	0.296
Male, n (%)	28 (66.7)	27 (67.5)	30 (62.5)	0.867
Disease lenght (yrs)	1 (0-2)	1 (0-4)	2 (1-4)	0.010
Hohen&Yahr	1.5 (1-2)	2 (1-2)	2 (2-3)	0.001
UPDRS-ME score	16.9 (9.7)	18.8 (10.8)	23.9 (10.2)	0.04
Total LEDD (>300 mg/die) %	19 (45.2)	21 (52.5)	35 (72.9)	0.022
ADL lost	0.3 (0.5)	0.6 (0.6)	0.8 (0.9)	0.025
IADL lost	0.2 (0.4)	0.5 (0.7)	1.3 (1.1)	<0.001
Depression, n (%)	9 (21.4)	14 (35.0)	12 25.0)	0.357
Anxiety, n (%)	6 (14.3)	16 (40.0)	16 (33.3)	0.028
CIRS Severity Index	2.4 (1.6)	3.3 (1.5)	3.0 (1.5)	0.034

Table 1. Demographic, clinical and behavioural characteristics

	PDw vs PD-SMC	PDw vs PD-SMC-MCI	PD-SMC vs PD-SMC-MCI
Age (per year increase)	1.07 (0.99-1.15)	1.06 (0.99-1.13)	1.02 (0.96-1.08)
Sex (Male vs Female)	0.94 (0.28-3.18)	1.87 (0.44-8.04)	1.50 (0.46-4.92)
Education	1.08 (0.96-1.22)	1.05 (0.92-1.20)	0.99 (0.88-1.12)
Disease Duration	1.29 (0.94-1.75)	1.13 (0.83-1.54)	0.93 (0.76-1.14)
Hohen & Yahr	0.92 (0.25-3.36)	5.39 (1.09-6.64)*	2.61 (0.80-8.51)
Total LEDD (>300 mg/die)	1.65 (0.48-5.65)	1.23 (0.27-5.69)	2.07 (0.60-7.15)
IADL lost (per unit increase)	3.11 (0.95-10.14)	8.59 (2.30-32.08)**	3.42 (1.53-7.69)**
Anxiety (yes vs no)	4.47 (1.20-6.68)*	1.96 (0.42-9.14)	0.75 (0.25-2.23)
CIRS index	1.20 (0.66-2.18)	0.76 (0.34-1.67)	0.74 (0.39-1.41)

Table 2. Multivariate logistic model of PDw Vs PD-SMC, PDw Vs PD-SMC-MCI and PD-SMC Vs PD-SMC-MCI patients

Conclusions

Over 65% of PD patients in our sample showed SMC, in isolation or within the MCI frame. However, the role of SMC in PD seems to have different aetiologies depending on the presence/absence of MCI.

SMC would represent a subjective reaction to the disease, while SMC-MCI would depict motor progression in PD.