

Giulia Fabris¹, Carmelo Fogliano¹, Aron Emmi^{1,2}, Andrea Porzionato^{1,2}, Angelo Antonini^{1,2}, Marta Campagnolo^{1,2}

1. Parkinson and Movement Disorders Unit, Centre for Rare Neurological Diseases (ERN-RND), Department of Neuroscience, University of Padova, Italy

2. Center for Neurodegenerative Disease Research (CESNE), University of Padova, Italy

Background

The majority of patients (up to 66%) with a diagnosis of multiple system atrophy (MSA) suffer from severe pain, with MSA-p (parkinsonian variant) being more affected than MSA-c (cerebellar variant).

The prevalence of pain in MSA is higher when compared to other parkinsonisms (PSP, CBS) and Parkinson's disease (PD). The main affected areas are neck and shoulders, back and limbs with an association respectively with orthostatic hypotension (OH), anterocollis/camptocormia and focal dystonia.

Objectives

- ➔ To characterize the prevalence and intensity of pain in patients diagnosed with PD (with dysautonomia) and MSA
- ➔ To identify possible correlations with biological features and markers of autonomic dysfunction

48 patients

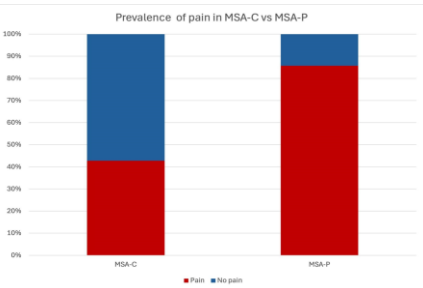
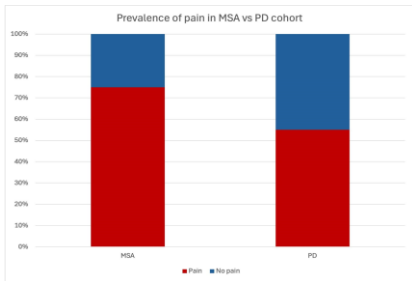
	MSA cohort	PD cohort
Patients, n. (%)	28 (58.3%)	20 (41.6%)
Male, n. (%)	10 (35.7%)	12 (60%)
Female, n. (%)	18 (64.2%)	8 (40%)
MSA-c, n (%)	7 (25%)	-
MSA-p, n (%)	21 (75%)	-
Mean age at onset	58.6 yrs [43-74]	64.2 yrs [46-77]
Mean disease duration	4.8 yrs [2-7]	5-8 yrs [46-77]

- Standardized **clinical** evaluation (MDS-UPDRS, UMSARS for MSA, MoCa score)

- **Neuroimaging** (brain MRI, PET/MRI)

- Assessment of **autonomic** symptoms (COMPASS-31)

- Assessment of cardiovascular and genitourinary dysautonomia (Holter EKG, autonomic testing, ambulatory blood pressure monitoring, [123I]MIBG cardiac scintigraphy, abdominal ultrasound with bladder post-void residual volume)



Higher prevalence in MSA-P vs MSA-C patients (85.7% vs 42.8%)

		MSA	PD
Prevalence of pain		21/28 (75%)	11/20 (55%)
Neck	General	13 (61.9%)	5 (45%)
	Orthostatic Hypotension (OH)	7 (53%)	3 (60%)
	Anterocollis Dystonia	6 (46%)	2 (40%)
Legs Arms	Rigidity-dystonia	7 (33%)	3 (27.2%)
		5 (23.8%)	-
Back	Camptocormia	6 (28.5)	4 (36%)
Oro-facial		5 (23.8%)	-
Diffuse body pain		8 (38%)	-



Correlation between neck pain and OH

Rigidity and dystonia are associated with pain localized in specific areas (i.e. limbs, neck)

Discussion

Pain is one of the most common non-motor symptom and has a significant impact on patients' quality of life.

Despite its prevalence, pain is often overlooked.

A standardized and multimodal evaluation is mandatory to define and quantify pain, with further studies on larger cohorts needed to confirm our data.