

# Baseline LUTS correlation with motor and cognitive function in patients with treatment naïve and non-treatment naïve Parkinson’s Disease

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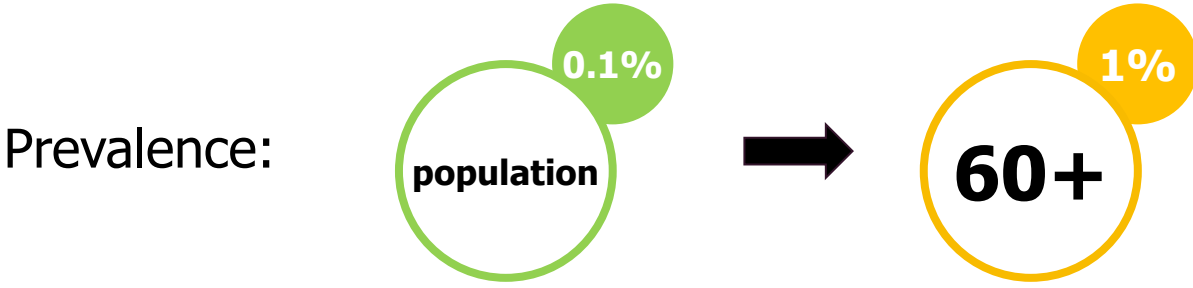
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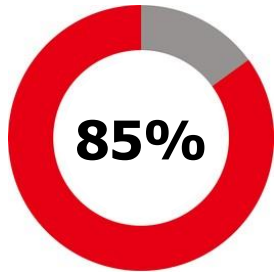
## Introduction

**Parkinson's Disease (PD)** is a common, progressive neurodegenerative disease.



Motor symptoms	Non-motor symptoms
Bradykinesia	Autonomic dysfunction
Resting tremor	Cognitive dysfunction
Rigidity	Many more...

Lower urinary tract symptoms (LUTS) are reported in **up to 85%** of patients and significantly **impair quality of life** [1].



## Rationale

- Few studies that use **MoCA** to assess cognition and compare against motor and LUTS severity.
- Extent of link between **motor, cognitive function, and urinary disability** is ambiguous.
- Movement **away from anti-cholinergic** agents due to adverse cognitive side-effects.

## Aim

To assess the baseline **LUTS, motor, and cognitive** functions and correlations using **validated** clinical questionnaires in patients diagnosed with PD.

## Methods

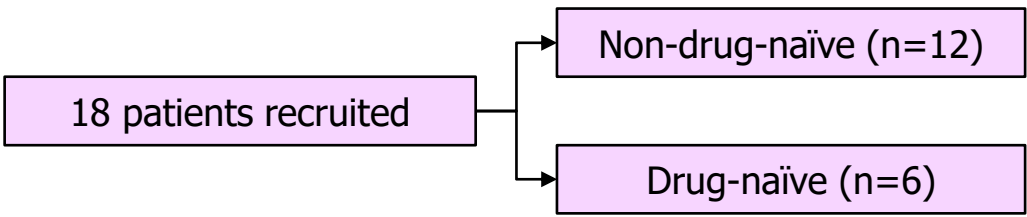
- Observational, cross-sectional study.
- Data prospectively collected from patients **diagnosed with PD** attending specialist movement disorders clinic using **fully validated** [2], **highly detailed** questionnaires and scales:

Item	Scale
Demographics and disease information	Data collection proforma
LUTS	ICIQ-MLUTS & ICIQ-FLUTS
Motor symptoms	UPDRS-ME* and modified Hoehn and Yahr
Cognitive performance	MoCA

Multivariate statistical analyses performed (Stata/MP 17).

*\*Unified Parkinson’s Disease Rating Scale – Motor examination.*

## Results



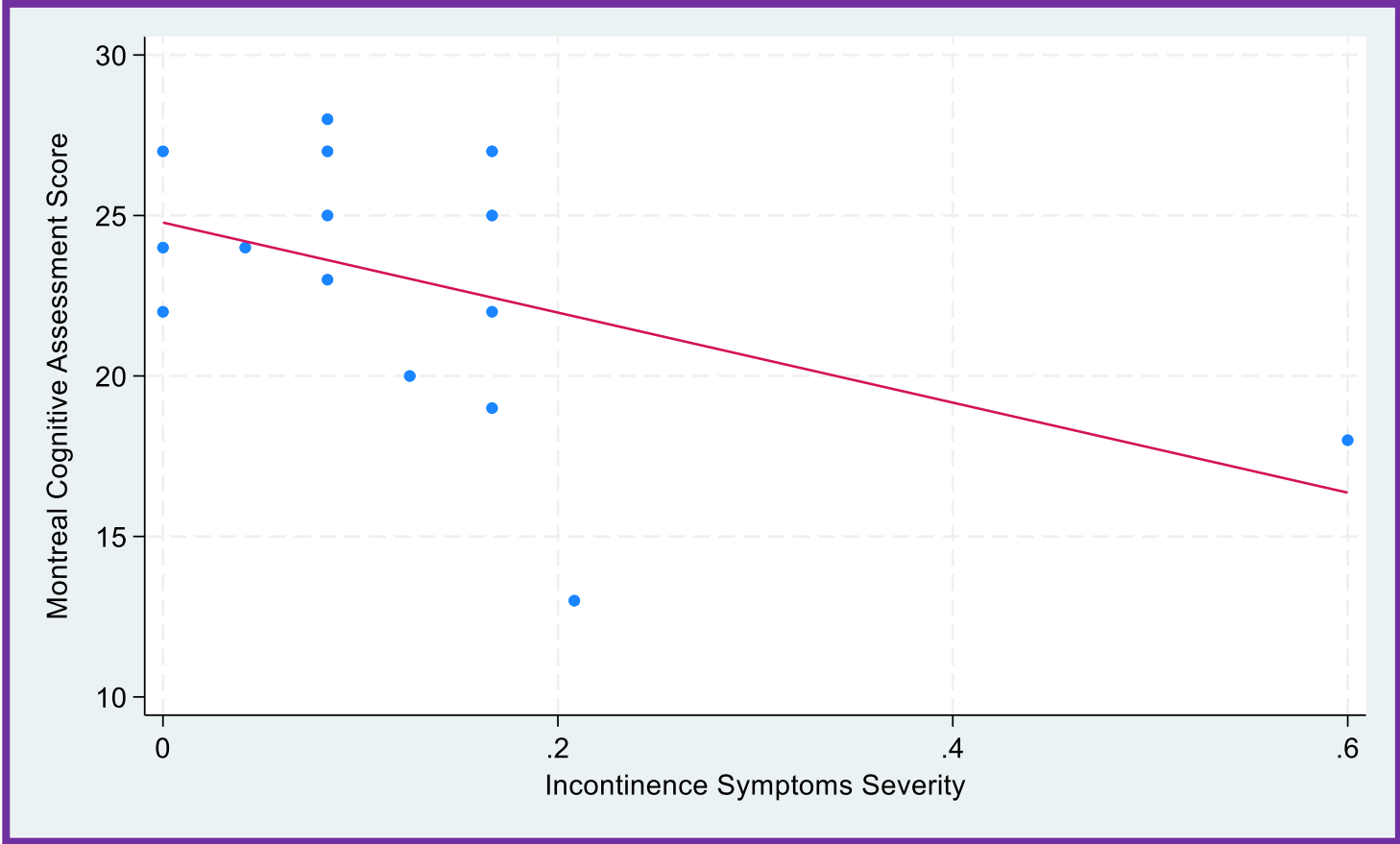
Sociodemographic characteristics, **median (IQR)**:

- Gender: 15 men and 3 women;
- Age: **69 years** (65 – 73);
- Disease duration: **4 years** (1 – 6);
- Hoehn and Yahr stage: **Stage 2.5 / 5** (2 – 3);
- MoCA score: **24/30** (20 – 27).

**Urinary incontinence symptoms** scores were significantly correlated with:

- Worse **quality of life** scores due to LUTS (r = 0.73, p < 0.001);
- Total urinary symptoms scores (r = 0.82, p < 0.001);
- Negatively correlated with **MoCA** scores (r = -0.52, p = 0.046).

Figure 1: Scatter plot of urinary incontinence symptoms severity percentage against MoCA score percentage in all patients.



Correlation	r-value	p-value
Moderate negative between MoCA score and incontinence symptoms.	-0.52	0.046*
No link between motor symptoms severity and incontinence symptoms.	0.09	0.725

## Conclusion

Cognitive impairment was found to be a **potent predictor** of urinary incontinence symptoms.

No such link was found between urinary incontinence and motor symptoms.

This suggests that cognitive function is a **better predictor** of LUTS severity in **PD** patients than their motor symptoms severity.

## References

[1] McDonald et al. (2017). Lower urinary tract symptoms in Parkinson's disease: Prevalence, aetiology and management. *Parkinsonism Relat Disord*, 35, 8-16. doi:10.1016/j.parkreldis.2016.10.024

[2] Pavy-Le Traon et al. (2018). Clinical Rating Scales for Urinary Symptoms in Parkinson Disease: Critique and Recommendations. *Mov Disord Clin Pract*, 5(5), 479-491. doi:10.1002/mdc3.12636