

# RESTLESS LEGS SYNDROME IN EARLY AND ADVANCED PARKINSON'S DISEASE: A PROSPECTIVE OBSERVATIONAL ANALYSIS AND CORRELATION WITH OTHER NON MOTOR FEATURES.

J A Boot<sup>1</sup>, P Reddy<sup>1</sup>, A Douiri<sup>2</sup>, S Robinson<sup>1</sup>, A Rizos<sup>1</sup>, A Martin<sup>1</sup>, P Martinez-Martin<sup>3</sup>, K Ray Chaudhuri<sup>1,4</sup>.

<sup>1</sup>National Parkinson Foundation Centre of Excellence, King's College Hospital, London, UK, <sup>2</sup>Primary Care And Public Health Sciences, King's College London, London, UK, <sup>3</sup>Alzheimer Centre, CIBERNED, Carlos III Institute of Health, Reina Sofia Foundation, Madrid, Spain, <sup>4</sup> University Hospital Lewisham, London, UK.

## BACKGROUND:

- In the general population RLS has a frequency of 8-10%.
- Previous uncontrolled studies have shown a significantly higher prevalence of RLS in PD patients.
- Little is known about RLS in PD, in particular severity and relationship with non motor symptoms (NMS) such as excessive daytime sleepiness, fatigue and insomnia.

## OBJECTIVE:

- To ascertain the prevalence of RLS in a clinical population of PD.
- To define the clinical correlates of RLS in PD with a focus on the non motor symptoms of PD, across a range of PD patients from untreated to very advanced.

**Non-Motor Symptom assessment scale for Parkinson's Disease**

Patient ID No: \_\_\_\_\_ Initials: \_\_\_\_\_ Age: \_\_\_\_\_

Domain 2: Sleep/fatigue

Severity	Frequency	Frequency x Severity
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCORE:

NMSS suggestive of RLS

Confirm with clinical interview and IRLS

Correlate with other NMSS domains

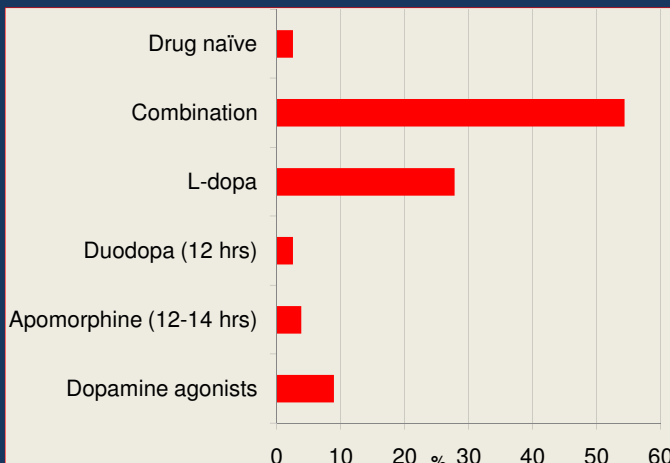
## METHODS:

- A retrospective clinical study of PD patients (untreated – stage 5 HY).
- RLS was diagnosed using the PD non motor symptoms scale (NMSS) sleep subsection questions and confirmed by International Restless Legs Study Group (IRLSSG) criteria and graded as mild (0-4), moderate (5-8) and severe (9-12), grading as used in NMSS validated for use in PD.
- Analysis was conducted using multivariate logistic regression and univariate regression analysis where applicable.
- Patients with moderate-severe RLS were included.

Demographics	No (%)/ Mean	Range
Mod-severe RLS (Male:female)	79 (24%) (50:29)	
Age	67.4 years	42-87 years
Disease duration	7.1 years	0-27 years
H&Y stage	2.8	1-5

## RESULTS:

- 329 PD patients were assessed using the NMSS.
- RLS (moderate-severe) was present in 24%, including untreated PD (n= 2).
- RLS was significantly associated with:
  - Severity of fatigue ( $\beta$ : 0.18, 95% CI [0.08-0.29],  $p= 0.001$ )
  - Insomnia ( $\beta$ : 0.11, 95% CI [0.02-0.21],  $p= 0.022$ )
  - NMSS sleep domain score (OR: 1.14, 95% CI [1.05-1.24],  $p= 0.002$ )
- No significance with:
  - Excessive daytime sleepiness ( $\beta$ : 0.05, 95% CI [-0.07-0.17],  $p= 0.39$ )
  - Age (OR: 1.03, 95% CI [0.96-1.10],  $p= 0.462$ )
  - Disease duration (OR: 0.95, 95% CI [0.85-1.07],  $p= 0.398$ )
  - HY (OR: 0.90, 95% CI [0.41-2.00],  $p= 0.794$ )



Graph 1: Treatment distribution in moderate to severe RLS PD patients.

## CONCLUSIONS:

- In this uncontrolled study, the occurrence of moderate to severe RLS is seen in 24% of a clinical PD cohort spanning HY stages 1-5.
- This prevalence is consistent with published observations of RLS in PD in non-controlled studies in Caucasians.
- RLS in PD leads to poor sleep quality, largely through insomnia, although our study shows no correlation with excessive daytime sleepiness.
- RLS in PD is also associated with fatigue in PD which is known to be detrimental to quality of life in people with Parkinson's.
- Further studies are required to determine pathophysiology, as most of these patients are already on levodopa/dopaminergic therapy, as shown in graph 1.

Study	RLS prevalence (%)
Ondo et al.	20.8%
Gomez-Esteban et al.	21.9%
Peralta et al	24.0%

## REFERENCES:

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4. Peralta CM et al., Mov Disord 2009; 24(14): 2076-80.