

OBJECTIVE

Although that other non-motor, prodromal signs of Parkinson's disease (PD) are well described, only little is known about the cognitive profile in the prodromal phase.

This study investigates the **cognitive profile** in people with **REM-sleep Behavior Disorder (RBD)** and hyposmia, in a **prodromal PD** cohort. Knowledge of these alterations in prodromal PD is still limited³.

BACKGROUND

PD PRODROMAL PERIOD can start **20 years** before onset of motor parkinsonism ¹

75% Of people with **RBD** Progress to PD within **10 years** ²

Studies suggested that changes to **EXECUTIVE FUNCTION** in particular, may be considered as **non-motor marker** of prodromal PD ³

RBD & OLFACTORY DYSFUNCTION = **RISK FACTORS** for **alpha-synucleinopathies**, such as **PD** ⁴

Prospective longitudinal studies are needed to assess the emergence of cognitive symptoms over time and to define prodromal non-motor symptoms.

Variable	Descriptive statistics		P-Values	Significance	
	pRBD (n = 95)	nRBD (n = 95)			pRBD vs. nRBD
	Mean	SD	Mean	SD	
Gender, M / F	63 / 32		63 / 32		p = 1.000
Age, in years	62.95	5.89	62.92	8.46	p = 0.245
Education, in years	12.90	4.26	13.76	3.48	p = 0.800
MoCA total score (/30)	25.28	3.56	27.16	2.49	p < 0.001 **

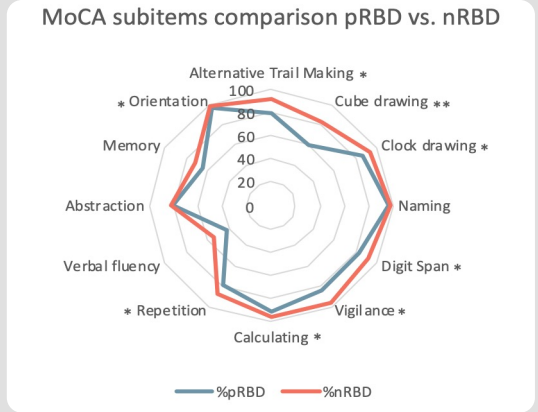
Table 1. Demographic and clinical data for pRBD and nRBD: SD: Standard Deviation; M: Male; F: Female; n = sample size; MoCA: Montreal Cognitive Assessment; * Significant at the 5% level (2-tailed). ** Significant at the Bonferroni-adjusted 5% level (p-value <= 0.05/4)

PRELIMINARY RESULTS

We observed lower MoCA total scores (p < 0.001) in the pRBD group, suggestive for a lower global cognitive profile in the pRBD and hyposmia group compared to the matched control group (Table 1).

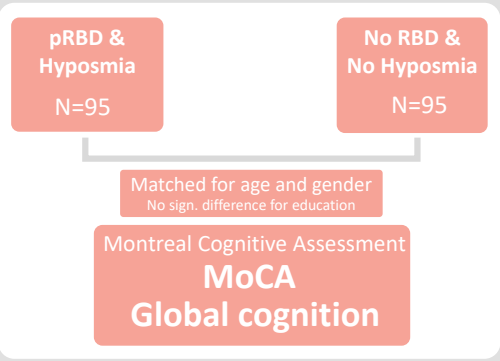
After multiple testing correction, we observed that MoCA subitems assessing visuo-constructive abilities were significantly lower in pRBD + hyposmia compared to the control group without RBD-hyposmia.

Furthermore, pRBD showed nominally lower scores in items assessing executive functions, visual-spatial functions and orientation.



PRELIMINARY RESULTS ON THE COGNITIVE PROFILE IN PRODROMAL PARKINSON'S DISEASE – A PROSPECTIVE STUDY

METHODS



Cross-sectional study of 190 participants from the Luxembourg RBD Study.

Participants were assigned to the probable RBD and hyposmia (pRBD; n=95) or no RBD and no hyposmia (nRBD; n=95) groups based on:

- RBD Screening Questionnaire (RBDSQ)⁵
- Olfactory test (B-SIT/Sniffin'Stick)^{6,7}.

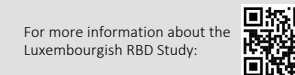
The Montreal Cognitive Assessment (MoCA)⁸ was applied to assess global cognition. Broader neuropsychological assessments are foreseen in the coming weeks to validate the preliminary results in the full sample of the Luxembourgish RBD study. Excluded were people with PD, as well as other neurological diseases and severe psychiatric disorders

OUTLOOK

Future research will seek to validate these results with broader neuropsychological assessments, polysomnography and increased sample size in the Luxembourgish RBD study. Furthermore, longitudinal analysis will evaluate conversion rates to alpha-synucleinopathies.



Poster in PDF:



For more information about the Luxembourgish RBD Study:

SUMMARY

In line with the literature on prodromal PD³, our results show that:

↘ **Global cognition in pRBD+hyposmia** compared to the control group. Besides this, pRBD performed worse in **visuospatial functions**.

We observed tendencies for impaired executive functions in pRBD. Given, that these observations are based only on sub-items of a screening tool, we need to be careful with the interpretation.

¹(Fereshtehnejad et al. 2019); ²(Iranzo et al., 2014); ³(Fengler et al. 2017); ⁴(Heinzel et al. 2019); ⁵(Nomura et al. 2017); ⁶(Doty et al. 1996); ⁷(Hummel et al. 1997); ⁸(Nasreddine et al. 2005).