Abstract 52 Table 1 CPAP compliance (% of usage >4 hours per night) and average hours of CPAP use per night in both study groups

		Number of patients	Median	IQR	P value
CPAP compliance (in %)	Pre- COVID group	110	38.50	69	0.141
	Post- COVID group	98	57.00	85	
Average CPAP use (in hours)	Pre- COVID group	110	3.02	5.06	0.034
	Post- COVID group	98	4.46	5.40	

Abstract 52 Table 2 CPAP compliance (% of CPAP usage >4 hours/night) across the categories

		Pre- COVID group			Post- COVID group		
		Median	IQR	P value	Median	IQR	P value
Gender	Male	36.0	61	0.48	55.0	84	0.99
	Female	50.0	77		70.0	87	
Ethnicity	British white	47.0	70	0.119	63.0	77	0.347
	BAME	36.5	69		24.5	74	
	Other white	25.0	42		80	80	
	Not stated	10.0	32		25.0	93	
Anti-depressant	Not on antidepressants	32.0	63	0.03	55.0	85	0.94
	On antidepressants	69.0	71		63.0	76	
Daytime sleepiness	ESS ≤ 10	27.5	51	0.049	63.0	81	0.722
	ESS > 10	51.0	74		42.0	90	
OSA severity	Mild OSA	22.0	50	0.08	78.0	97	0.694
	Moderate OSA	27.0	63		57.0	92	
	Severe OSA	55.5	76		51.0	71	

patients, British white ethnicity and those with moderate and severe OSA, but this did not reach any statistical significance. Compliance was significantly high in patients with high ESS and those on an antidepressant in the Pre-COVID group (p=0.049 and 0.03, respectively). Twelve patients returned CPAP among pre-COVID (n=110) compared to 14 of post-COVID (n=98) (p=0.531) (table 2).

Conclusion The study showed CPAP compliance of telephonic clinic consultation was slightly better compared to conventional clinic consultation. This new virtual clinic model can be adopted successfully during the challenging COVID times.

53 PSEUDO-OBSTRUCTIVE EVENTS IN SPINAL MUSCULAR ATROPHY AS A POTENTIAL MARKER FOR DISEASE PROGRESSION

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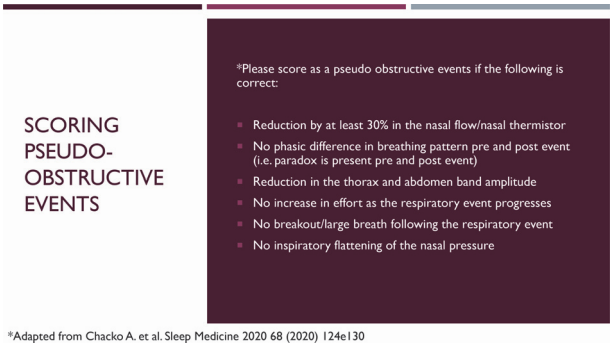
Introduction Sleep disordered breathing (SDB) is common in children with spinal muscular atrophy (SMA) as a result of respiratory muscle weakness. However, SDB events are currently scored according to criteria created for healthy children.



Abstract 53 Figure 1

This study aims to add to previous evidence [1,2] that SMA type II patients have respiratory events (we defined them as 'pseudo-obstruction') which do not conform to the current AASM guidelines for obstructive or central events. They are the result of paradoxical breathing and REM-related shallow breathing.

Methods Respiratory events were defined as either 'obstructive apnoea' (OA), 'central apnoea' (CA), 'central hypopnoea' (CH), 'obstructive hypopnoea' (OH) as per AASM guidelines. We additionally defined the criteria for 'pseudo-obstruction' (PO) based on previous publications (figure 1).[1]

Trained sleep physiologists were provided 8 'test' epochs randomly chosen from either SMA II or other patients. Physiologists were asked to designate the respiratory events they deemed most appropriate for each epoch, blind to diagnosis of the patient. Interscorer reliability tests were performed against the gold standard for each event.

Results The average concordance with the gold standard was 75% overall. It was mildly reduced to 67% when looking specifically at POs.

We are currently evaluating whether disease progression is associated with an increase in POs by looking at subsequent yearly sleep studies of 10 SMA II and 1 SMA I patient, self-ventilating in room air, across a 3-year period.

Discussion Future efforts will aim to look more closely at inter scorer reliability. Recognising these pseudo-obstructive events may influence treatment.[2] Additionally, if these events correlate along the motor and respiratory deterioration, they can be used as markers of response to overnight ventilation and, more importantly, to new available treatments.

REFERENCES

1. Chacko A. *Sleep Medicine* 2020.
2. Kouri I. *Journal of clinical neuromuscular disease*, 2020.
3. Berry. AASM manual 2020.

54 SLEEP SPINDLES AS A BIOMARKER FOR ALPHA-SYNUCLEINOPATHIES IN RAPID EYE MOVEMENT (REM) BEHAVIOUR DISORDER (RBD)

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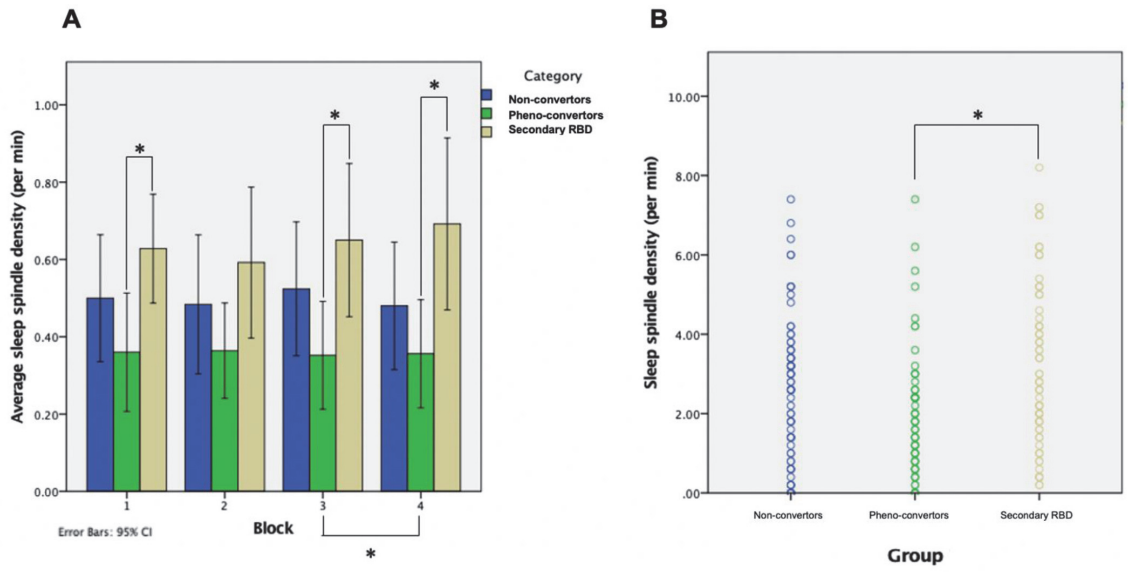
Introduction Idiopathic rapid eye movement behaviour disorder (iRBD) is a strong predictor for the development of alpha-synucleinopathies. Electroencephalographic (EEG) oscillations known as sleep spindles are found during non-rapid eye movement sleep. These bursts of neural oscillatory activity are



Abstract 54 Figure 1 Sleep spindle density. A) The average spindle density per minute in each block of NREM throughout the night '*'=p<0.05(One-way ANOVA and post-hoc Tukey's test)
Abbreviations: SS/min=Sleep spindles per minutes. Error bars show a 95% confidence interval

known to decrease in patients with alpha-synucleinopathies. We hypothesized that that sleep spindle density would differ in patients with iRBD with and without an alpha-synucleinopathy.

Methods This was a retrospective cohort study comprised of sixty male participants, all of whom were diagnosed with RBD. Sleep spindles were manually identified by an experienced technologist at a central scalp location (C3-A2) in 20 patients with iRBD who converted to an alpha-synucleinopathy, 20 age-matched patients with secondary RBD and 20 patients with a diagnosis of iRBD who had not converted.

Results Patients who phenoconverted showed a significant decrease in sleep spindle activity compared to patients with secondary RBD (p<0.05) at time of diagnosis. Spindle density was lower in patients who had phenoconverted. Sleep spindle density reduction was significant in patients with PD; there were too few patients with MSA and DLB to determine differences in spindle density counts.

Discussion This is the first study to look into multiple alpha-synucleinopathies to investigate sleep spindle density changes. As a statistical significance was found between the spindle density of patients who had gone on to develop a neurodegenerative disorder and those who had secondary RBD, when examining spindle density in the second half of the night (p=0.026) (figure 1). It follows that sleep spindle density may have the potential to be a prodromal marker for phenoconversion and underlying alterations in sleep networks that lead to a clinical diagnosis of an alpha-synucleinopathy.

55 THE USE OF TELEMEDICINE IN THE MANAGEMENT OF CONTINUOUS POSITIVE AIRWAY PRESSURE FOR THE TREATMENT OF OBSTRUCTIVE SLEEP APNOEA, A RANDOMISED CONTROLLED TRIAL

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Introduction Obstructive sleep apnoea (OSA) is a condition whereby the airway partially or totally obstructs during sleep. The gold-standard treatment for moderate to severe OSA is continuous positive airway pressure (CPAP). However compliance with treatment can be troublesome with 20-30% of patients stopping treatment. A recent meta-analytic review (Aardoom et al 2000) of telemedicine in CPAP treatment has

Abstract 55 Table 1 Compliance in hours for each study arm

Data Collection Points	Compliance (hours in 24 hours use)	Arm 1 – Standard Care, face to face follow up appointment (n=30)	Arm 2 – Modem and virtual follow up clinic appointment (n=28)	Arm 3 – Modem, application DreamMapper and virtual follow up appointment (n=32)
1st follow up 1-2 weeks	Mean	6.18	5.65	6.54
	SD	2.21	2.40	1.89
6 month follow up	Mean	6.28	5.49	6.24
	SD	1.54	2.17	1.65