Abstract P14 Table 1 Descriptive statistics for patients who underwent Home Video MSLT

Female Gender	5 (100%)
Age, mean ±	26.2 (Minimum: 19: Maximum:41)
Smoking Status	0 (0%)
Caffeine Intake	1 (20%)
Comorbidities	4 (80%)
Obesity	2 (40%)
ADHD	1 (20%)
Learning disability	1 (20%)
Epworth, mean	13.75 (One result not available)
Reason for referral	
Narcolepsy	3 (60%)
Idiopathic Hypersomnia	1 (20%)
Narcolepsy Vs Idiopathic Hypersomnia	1 (20%)
Referring Specialisms	
Neurology	4 (80%)
Respiratory Physician	1 (20%)
Polysomnography Results	
Total Sleep Time, minutes	475minutes (435–515)
Sleep Latency, minutes±	8.08 minutes (0.4–14.5 minutes)
Sleep efficiency%, average ±	87.62% (74.5–90.7%)
REM sleep latency, mean ±	175minutes (62.5–374 minutes)
REM%TST, mean ±	17%, (2.5–23.5%)
PLMS>15 events per hour, n (%)	2, (40%)
AHI>5 events per hour, n (%)	3 (60%)
AHI>15 events per hour, n (%)	1 (20%)
Multiple Latency Sleep Test	
Number of Naps:	
4	4 (80%)
5	1 (20%)
Mean Sleep Latency, minutes ±	9.72minutes, (4.7–15.9 minutes)
SOREMs≥2	2 (40%)
Final Diagnosis	
Narcolepsy	2 (40%)
Idiopathic Hypersomnia	0 (0%)
Other:	
PLMS	2 (40%)
OSA	3 (60%)

REFERENCES

1. Arand DL, Bonnet MH. 'The multiple sleep latency test'. *Handb Clin Neurol* 2019;**160**:393–403
2. Beiske KK, Sand T, Rugland E, Stavem K. 'Comparison of Sleep Latency and Number of SOREMPs in the home and hospital with a modified multiple sleep latency test: a randomized crossover study'. *Journal of Clinical Neurophysiology* 2017;**34**:3
3. Krahn LE, Arand DL, Avidan AY, Davila DG, DeBassio WA, Ruoff CM, Harrod CG. 'Recommended protocols for the Multiple Sleep Latency Test and Maintenance of Wakefulness Test in adults: guidance from the American Academy of Sleep Medicine', *Clinical Sleep Medicine* 2021;**17**:12

P15 PREDICTORS OF OBSTRUCTIVE SLEEP APNOEA IN CHILDREN WITH OBESITY

[1]Catharina Jialing Tao*, [2]Ashleigh Gibby, [3,4,5]Katrina Burrows, [3,6]Jo-Anne Johnson, [4,7,6,8]Sachin Patil, [2]Theofilos Polychronakis. *[1]University of Cambridge, Cambridge, UK; [2]Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK; [3]Colchester Hospital, East Suffolk and North Essex NHS Foundation Trust, Colchester, UK; [4]Ipswich Hospital, East Suffolk and North Essex NHS Foundation Trust, Ipswich, UK; [5]University of Suffolk, Ipswich, UK; [6]Anglia Ruskin School of Medicine, Chelmsford, UK; [7]Barking Havering Redbridge University Hospital,, UK; [8]University of East Anglia, Norwich, UK*

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Introduction Obstructive sleep apnoea hypopnoea syndrome (OSAHS) is common in children with obesity and is associated with long-term morbidity. Understanding risk factors that predispose to OSAHS in children with obesity may help improve targeted screening with sleep studies and is likely to lead to early detection and intervention. The aim of this multicentre retrospective case-cohort study was to assess how age, sex, BMI, and adenotonsillar hypertrophy presence correlate with OSAHS diagnosis in children with obesity.[1–3]

Methods This was a retrospective review of medical notes of children with obesity, as defined by WHO (BMI-z-score >3 for children 0–5 yo, BMI-z-score >2 for children >5 yo) referred to three regional hospitals for sleep study between January 2020 and June 2023. Children with significant co-morbidities such as trisomy 21 or neuro-disability were excluded.

Results 46 children (16 female: 30 male) with median age (range) of 9 years (2–16) and median BMI-z-score of 3.34 (2.12–7.67) were included in the analysis. 18 had adenotonsillar enlargement. 12 had history of adenotonsillectomy. Mean (standard deviation) Obstructive Apnoea Hypopnoea Index (OAHI) was 3.198 events/hr (3.918). 19 children had normal OAHI, 16 had mild OSAHS and 11 had moderate to severe OSAHS. Diagnosis of OSAHS was independent of age. Boys had significantly higher mean OAHI than girls (4.073 Vs 1.556 respectively, p=0.009). BMI-z-score moderately correlated with OAHI, (rho=0.362, p=0.040). There was no difference in mean BMI-z-score between normal, mild, and moderate-severe OSAHS groups (p=0.116). OSAHS was more common in children with adenotonsillar enlargement (Odds Ratio=10.5, 95% CI of 2.15–51.281, p=0.002)

Discussion Male sex, adenotonsillar enlargement, and higher BMI-z-score are associated with OSA diagnosis in children with obesity.

REFERENCES

1. Bachrach K, *et al. Ann Otol Rhinol Laryngol* 2022;**131**:520–6.
2. Kohler M, *et al. J Clin Sleep Med* 2008;**04**:129–36.
3. Supriyatno B, *et al. Paediatr Respir Rev* 2010;**11**:S107

P16 INTERVENTION TO ENHANCE ADHERENCE TO MANDIBULAR ADVANCEMENT APPLIANCE IN PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA: A RANDOMISED CLINICAL TRIAL

[1]Harishri Tallamraju*, [1]Padhraig S Fleming, [2]J Tim Newton, [1]Ama Johal. *[1]Centre of Oral Bioengineering, Institute of DentistryQueen Mary University of London, London; [2]Department of Population and Patient Health, Faculty of Dentistry, Oral and Craniofacial Sciences, King's College London, London*

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To assess the effectiveness of a stage-matched intervention on adherence to mandibular advancement appliance (MAA) in participants with obstructive sleep apnoea (OSA).

A randomised parallel-arm, Hospital-based, clinical trial was undertaken at the Royal London Dental Hospital, UK. Fifty-six participants (Adults ≥ 18 years) with newly diagnosed OSA were enrolled in the study and randomised to intervention care (IC) and standardized care (SC) groups. Participants in the SC group received routine care whilst participants in the IC group received the stage-matched intervention, developed using the behaviour change model, the health-action process approach (HAPA). Data indicating

MAA adherence was collected both objectively and subjectively, from micro-sensors embedded in the MAA design and sleep diaries, respectively at 3- and 6-months. In addition, a range of questionnaires was designed to assess risk perception, outcome expectancy, self-efficacy (SEMSA), daytime sleepiness, quality of sleep, socioeconomic position, and social support.

The mean objective adherence for 30 participants at 3-month (IC = 15, SC = 15) was 2.02 (SD = 2.68) vs 2.63 (SD = 2.57) hours/night in the IC and SC group respectively. Whilst the mean objective adherence for 25 participants at 6-month (IC = 10, SC = 15) was 2.42 (SD = 2.59) vs 3.21 (SD = 3.37) hours/night for IC and SC groups respectively. No correlation was seen between daytime sleepiness ($p = 0.24$), quality of sleep ($p = 0.96$), social support ($p = 0.52$), socioeconomic position ($p = 0.96$) and mean adherence. Linear regression for adherence presented a positive coefficient for risk perception ($p = 0.035$, $r^2 = 0.16$) and outcome expectancy ($p = 0.003$, $r^2 = 0.28$).

Given the positive correlation between risk perception, outcome expectancy and patient adherence. Further research would be beneficial in describing the determinants of adherence, such as risk perception, and outcome expectancy in relation to adherence to MAA.

P17 CASE REPORT OF COMMON OCCURRENCE OF NARCOLEPSY TYPE 1 AND MYASTHENIA GRAVIS IN ADOLESCENT GIRL

Thomas Maycock*, Thomas Rossor, Maria Vanegas, Paul Gringras, Heinz Jungbluth. *Evelina London Children's Hospital, London, UK*

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Introduction Narcolepsy with cataplexy and myasthenia gravis are both chronic neurological conditions causing symptoms of muscle weakness, often affecting facial muscles, and both attributed to an immune-mediated aetiology. Here we report an adolescent girl diagnosed with both conditions and discuss possible shared mechanisms and the diagnostic challenges presented by her case, to inform and aid clinicians managing children and young people with these rare conditions.

Case A ten-year-old girl was referred o the paediatric sleep clinic with a two year history of excessive daytime sleepiness and cataplexy, featuring full loss of postural tone. She was subsequently found to have narcolepsy with cataplexy based on positive PSG (figure 1) & MSLT findings with supporting HLA-DQB1*06:02 result. She was managed with methylphenidate, and later venlafaxine, but experienced unsatisfactory symptom control.

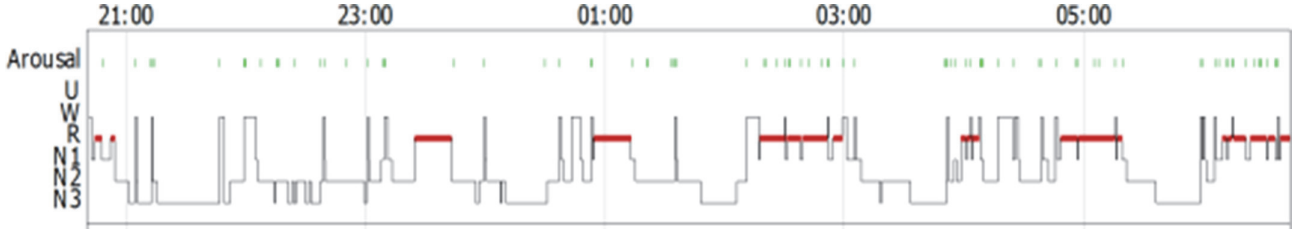
Two years later she represented to ophthalmology with ptosis and was subsequently found to have elevated acetylcholine receptor antibodies. She was referred to paediatric neurology and clinical examination demonstrated fatiguability consistent with myasthenia gravis and pyridostigmine was started with good effect.

Discussion Interesting comparisons between both conditions can be drawn: both cause weakness that can affect facial muscles and cause ptosis and both can be worse as the day progresses for different reasons; both have an immune-mediated aetiology with myasthenia gravis well recognised as antibody-mediated and narcolepsy shown to have increased T-cell activity; both have documented association with other autoimmune disorders.

Conclusion This case highlights an unusual presentation of two very rare conditions with both overlapping clinical features. Co-occurrence is incredibly rare, but caution and consideration of other differential diagnoses is advised if symptoms do not respond to treatment, or are not fully consistent with typical narcolepsy. The possible co-existence of other immune-mediated disorders should be borne in mind, with a low threshold to involve other expert professionals.

REFERENCES

1. Wise MS, Lynch J. Narcolepsy in children. *Semin. Pediatr. Neurol.* 2001;**8**:198–206
2. Andlauer O, *et al.* Nocturnal rapid eye movement sleep latency for identifying patients with narcolepsy/hypocretin deficiency. *JAMA Neurol.* 2013;**70**:891–902
3. Drakatos P, *et al.* First rapid eye movement sleep periods and sleep-onset rapid eye movement periods in sleep-stage sequencing of hypersomnias. *Sleep Med.* 2013;**14**:897–901
4. Mignot E, *et al.* The role of cerebrospinal fluid hypocretin measurement in the diagnosis of narcolepsy and other hypersomnias. *Arch. Neurol.* 2002;**59**:1553–1562
5. Miyagawa T, Tokunaga K. Genetics of narcolepsy. *Hum. Genome Var.* 2019;**6**:4
6. Jayawant S. Myasthenia in children. (Mac Keith Press, 2020)
7. Bassetti CLA, *et al.* European guideline and expert statements on the management of narcolepsy in adults and children. *J. Sleep Res.* 2021;**30**:e13387
8. Pensato U, Pizza F, Plazzi G. Myasthenic or cataplectic facies? Ice pack test response in paediatric type 1 narcolepsy. *Sleep Med.* 2021;**87**:20–21
9. El Sammak S, Cipriani V, Sahni A, Attarian H. Narcolepsy type 1 comorbid with myasthenia gravis: possible immunological link. *J. Clin. Sleep Med. JCSM Off. Publ. Am. Acad. Sleep Med.* 2022;**18**:1889–1890
10. Latorre D, *et al.* T cells in patients with narcolepsy target self-antigens of hypocretin neurons. *Nature* 2018;**562**:63–68
11. Giannoccaro MP, *et al.* Antibodies against hypocretin receptor 2 are rare in narcolepsy. *Sleep* 2017;**40**
12. Mart nez-Orozco FJ, *et al.* Narcolepsy with cataplexy and comorbid immunopathological diseases. *J. Sleep Res.* 2014;**23**:414–419
13. Aydinoz S, *et al.* Allergies and disease severity in childhood narcolepsy: preliminary findings. *Sleep* 2015;**38**:1981–1984
14. Barateau L, *et al.* Comorbidity between central disorders of hypersomnolence and immune-based disorders. *Neurology* 2017;**88**:93–100
15. Tajima Y, Yaguchi H, Mito Y. Non-motor comorbidity of Myasthenia Gravis: Myasthenia Gravis as a systemic immunological disorder involving non-motor systems. *Intern. Med. Tokyo Jpn.* 2019;**58**:1341–1347



Abstract P17 Figure 1 Hypnogram generated from our patient's PSG demonstrating rapid sleep onset time (SOT), with first REM cycle arising from N1