P077

RELIABILITY OF THE CLINICAL CHARACTERIZATION OF ISOLATED REM SLEEP BEHAVIOR DISORDER

***Levendowski D[1]**, Lee-Iannotti J[2], Shprecher D[3], Guevarra C[2], Timm P[4], Angel E[1], Mazeika G[5], St. Louis E[4]*

[1]Advanced Brain Monitoring, Inc., Carlsbad, USA, [2]Banner University Medical Center, Phoenix, USA, [3]Banner Sun Health Research Institute, Sun City, USA, [4]Dept of Neurology and Medicine, Mayo Clinic, Rochester, USA, [5]Sound Sleep Health, Seattle, USA

Purpose: Compare agreements between polysomnography-based (PSG) diagnosis of isolated REM-sleep-behavior-disorder (iRBD) and Non-REM-Hypertonia (NRH), a novel biomarker independently associated with synucleinopathy-related neurodegenerative diseases.

Methods: Sixteen patients with histories of dream-enactment-behavior (DEB)(women=38%; age:64.6±13.0) underwent PSG with simultaneously-recorded Sleep Profiler (SP).

Two boarded sleep neurologists independently characterized iRBD. Physician1 combined abnormal qualitative REM-sleep-without-atonia (RSWA) by submental electromyography, with video-confirmation of probably DEB. Physician2 relied solely on qualitative RSWA. SP was auto-staged, technically reviewed, and reprocessed for automated abnormal NRH detection. Kappa scores measured physician and NRH agreements.

Results: In the 14 records with REM sleep, iRBD was characterized in: Physician1=64%, Physician2=79%, NRH=71% of the records. Across the three methods, unanimous iRBD agreement occurred in 57% of the records (positive=7, negative=1).

The between-physician agreement in iRBD classifications was fair (kappa=0.32). The agreement between NRH and Physician1 was moderate (kappa=0.52) versus slight with Physician2 (kappa=0.05). NRH comparisons to consensus physician agreement yielded one false-positive and one false-negative iRBD finding. Physician2 classified: a) iRBD in two cases that were negative by Physician1 and NRH, and b) one negative case that Physician1 and NRH characterized as iRBD. Physician1 identified one negative case that was classified iRBD by Physician2 and NRH. Additionally, NRH was abnormal in one of the two records with no REM sleep.

Discussion: NRH may assist in iRBD risk assessment, given it agreed with at least one physician in 86% of the cases and the between-physician iRBD agreement was only fair. NRH also characterized iRBD-risk in patients with insufficient REM sleep for RSWA assessment.

P078

ORAL APPLIANCE FABRICATION SETTINGS IMPACT TREATMENT EFFICACY

***Levendowski D[1]**, Sall E[2], Odom W[2], Beine B[3], Cruz Arista D[2], Fregoso T[2], Munafo D[3]*

[1]Advanced Brain Monitoring, Inc., Carlsbad, USA, [2]Sleep Alliance, San Diego, USA, [3]Sleep Data, San Diego, USA

Purpose: Assess the impact of custom oral appliance (CA) fabrication settings on treatment outcomes.

Methods: CPAP-intolerant patients completed a two-night home-sleep-apnea study (HSAT); Night1=baseline, Night2=Apnea Guard® trial appliance (AG). The AG vertical-dimension-of-occlusion (VDO) selection was based on tongue-scallop (women=5.5/6.5 mm, men= 6.5/8.0 mm), with a target protrusion of 70% from neutral-maximum while in situ.

Study1 CA VDO was dependent on sex (women=2.5 mm, men=5 mm), with protrusion set using a George-Gauge measured 70% from maximum retrusion-protrusion with dentist-directed titration. Study2 CA was fabricated to the AG VDO and target protrusion bite-registration.

Efficacy HSATs were conducted after completion of Study1 CA titration with vertical-elastics optional, and at the AG target protrusion with vertical-elastics mandatory in Study2. Statistics included Mann-Whitney, Chi-squared, and Bland-Altman analyses.

Results: The Study1 (n=84) and Study2 (n=46) distributions were equivalent for tongue-scallop (64/63%) and sex (women=45/41%), however, noted differences in age (53.8±11.9 vs. 58.4±12.2; P=0.052), body-mass-index (29.4±5.7 vs. 27.8±4.0; P=0.128) and pre-treatment AHI severities (24.6±14.4 vs. 29.2±17.4 events/h; P=0.155) were observed.

The Bland-Altman biases were significant different (Study1=4.2±7.8 vs. Study2=1.3±7.0 events/h, P=0.035). The significant Study1 differences between the CA vs. AG AHIs (12.3±9.2 vs. 8.2±5.9 events/h, P<0.0002) were not apparent in Study2 (11.7±8.0 vs. 10.4±6.7 events/h, P=0.362), however, the Study2 AG AHI values were higher (P=0.055).

Discussion: Despite the trend toward greater Study2 pre-treatment and AG AHI severities, CA treatment efficacy was equivalent to the AG once VMO was controlled and fabricated using the AG VDO and protrusion bite-registration. These findings confirmed CA fabrication settings impact treatment outcomes.

P079

EFFECT OF SLEEPWEAR FIBRE TYPE ON MENOPAUSAL SLEEP QUALITY – STUDY PROTOCOL AND PRELIMINARY DATA

***Li X[1]**, Halaki M[1,2], Mahar T[3], Ropert S[3], Ireland A[3], Chow C[1,2]*

[1]Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, [2]Charles Perkins Centre, The University of Sydney, Sydney, Australia, [3]Australian Wool Innovation Limited, Sydney, Australia

Introduction: Vasomotor symptoms and sleep disturbances are common in menopausal women. Different fabric types affect thermal comfort through moisture absorption and thermal insulation. This study examined the impact of cotton and wool sleepwear on menopausal women's sleep quality.

Methods: This is a randomized, crossover, repeated-measures and triple-blinded trial comparing the sleep quality and vasomotor symptoms of healthy menopausal women between cotton and wool sleepwear at 30°C, 50% relative humidity. Participants undergo 6 laboratory visits. After a screening visit and a familiarization night, participants are randomized to 4 nights (2 nights in cotton and 2 nights in wool sleepwear) during which polysomnography and actigraphy recordings are taken including objective hot flush events, room temperature and relative humidity measurements, as well as subjective questionnaires on clothing comfort, mood and vasomotor symptoms.

Results: Eleven participants (age 51.2±4.7 years, BMI 26.8±2.9 kg.m-2, Insomnia Severity Index 11.1±5.5) completed all six visits so far. Reasons for exclusion: 3 didn't have vasomotor symptoms; 1 on HRT, 5 had severe sleep disturbances, 3 on medications, 4 had diabetes, 1 asthma, and 1 had BMI>30. All sleep-related outcomes are pending analysis (blinding).

Discussion: Recruitment is a major study challenge. Many participants found it hard to arrange a time to attend overnight studies due to family/work commitments. The COVID-19 pandemic changed people's attitude as some were hesitant to attend