

1 SLEEP DISTURBANCES ASSOCIATED WITH POST-TRAUMATIC STRESS DISORDER: PRESENTATION AND POLYSOMNOGRAPHIC FEATURES IN A POPULATION OF PATIENTS ADMITTED TO A SLEEP LABORATORY

¹Joyce Y Zhang*, ²Ian E Smith, ³Irene Valero-Sanchez. ¹University of East Anglia, UK; ²Royal Papworth Hospital NHS Foundation Trust, UK; ³University Hospitals of Leicester NHS Trust, UK

10.1136/bmjresp-2021-bssconf.1

Introduction In this study we assess sleep complaints and objective sleep parameters in a cohort of patients with post-traumatic stress disorder (PTSD) admitted to a sleep laboratory.

Methods Retrospective study of patients with a diagnosis of PTSD who were referred for full polysomnography (PSG) in a sleep service as part of the investigation of a sleep disturbance. Demographic data, presenting complaints, PSG parameters, subjective levels of sleepiness, sleep diary, medication and diagnoses were recorded.

Result The sample included 30 patients, 46.7% female 53.3% male, mean age 45 years, (SD 15), mean BMI 28 (SD 4.7) kg/m. 13 patients presented with excess daytime sleepiness or fatigue, 11 with parasomnia, 5 with poor sleep and 1 patient with nightmare disorder. 21 had a diagnosis of depression, 12 reported insomnia and 20 nightmares. 63.3% received antidepressants.

Mean total sleep time (TST) in sleep diary was 6.5 hours. Mean Epworth score was 10 (SD 6.5). PSG parameters (expressed as mean and SD) were: Sleep latency (SL) 26.3 (35.8) min, TST 390 (130) min, sleep efficiency (SE) for time in bed 77.6 (16.2)%, SE for sleep period of time 80.5 (16.7)%, stages 1 and 2: 48 (13.5)%, REM 17 (15.5)% slow wave sleep 13 (9.5)%, apnoea hypopnea index 7.6 (9.2)/h, periodic limb movement (PLM) index 19.5 (29.9)/h. Parasomnias were recorded in 7 cases. After PSG, 8 patients were diagnosed with PLM disorder, 9 with parasomnia, 6 with sleep apnoea, 3 with insomnia. 5 had no sleep disorder identified. The presence of PLM during sleep did not correlate with the usage of antidepressants.

Discussion Both sleep onset and sleep maintenance insomnia were reported. Nightmares were frequent. The presence of PLMD was higher than expected, raising the possibility that it may be a contributor to sleep disturbances in PTSD. A case controlled study would be of value.

2 SERVICE REVIEW: A COMPARISON OF MANUAL VS AUTO ANALYSIS SCORING USING THE NOX T3 LIMITED POLYSOMNOGRAPHIC DEVICE

Corey Davies*, Lois Attewell, Hannah Hunt, Joelle Smith, Esme Burge, Alex Tuck. Cardiff and Vale UHB, Cardiff, UK

10.1136/bmjresp-2021-bssconf.2

Introduction As physiologists we spend a vast amount of time manually analysing sleep studies. As technology advances, we are often told that the auto analysis programmes are improving with every update. We decided to find out how accurate it has become and whether it can be relied on for an accurate clinical outcome.

Methods We utilised clinical downtime during the COVID-19 pandemic to carry out a service audit between September 2019 and March 2020. 160 studies were reviewed with a

comparison between automatic and manually scored AHI. Pearsons co-efficient of variation and Bland-Altman analysis was carried out both to investigate the correlation of the assays as well as allowing clinical judgement into the significance.

Results We found that 90 results changed scoring classification and 70 stayed the same. A Pearsons co-efficient of variation was calculated at 0.86 indicating a very high correlation (Schober, Boer and Schwarte, 2018), however overall, we found an average AHI difference of 8.4 in the scores between auto and manual. Looking closely at the distribution on the plot it suggests that the auto analysis programme correlates highly when the AHI is < 7 with a tightly packed area of datum however as the AHI increases so does the scatter.

Discussion We found although there is a positive correlation auto analysis is unable to operate in a small enough window to have no impact on the treatment pathway. Relying on an automatic programme would indeed 'speed up' the service but at the cost of accurate clinical science as well as physical cost on misdiagnosis.

We are aware this study is limited to the NOX T3 device and a relatively small data set so may not extend beyond these limitations.

REFERENCE

1. Schober P, Boer C, and Schwarte L. Correlation Coefficients. *Anesthesia & Analgesia* 2018;**126**(5):1763-1768.

3 LONG TERM IMPACT OF POOR SLEEP ON FUTURE METABOLIC AND MENTAL HEALTH: A UK BIOBANK STUDY OF 84,404 PARTICIPANTS

¹Gewei Zhu*, ²David Gunn, ³Michael Catt, ^{1,3}Mark Birch-Machin, ⁴Kirstie Anderson. ¹Faculty of Medical Sciences, Newcastle University, Newcastle Upon Tyne, UK; ²Unilever RandD, Colworth Science Park, Sharnbrook, UK; ³National Innovation Centre for Ageing, Newcastle upon Tyne, UK; ⁴Department of Neurology, Royal Victoria Infirmary, Newcastle upon Tyne, UK

10.1136/bmjresp-2021-bssconf.3

Introduction Both short and long sleep duration and sleep fragmentation have immediate and long-term adverse impacts on physical and mental health. However, most population studies are based on self-reported sleep and health status rather than objective assessments. There are few longitudinal datasets that measure the impact of poor sleep over time. This study investigated the impact of objectively measured poor sleep on the long term metabolic and mental health status amongst the UK Biobank population.

Methods Sociodemographic, accelerometry and primary care records data were obtained from the UK Biobank (n=84,404). Sleep duration and fragmentation was objectively assessed with accelerometry (mean age= 62.4 years) and divided into five sleep groups: <5 hours, 5-6 hours, 6-7 hours, 7-8 hours and >8 hours. Sleep fragmentation related measurements including wake after sleep onset, activity level during the least active five hours and episodes of movement during sleep were also analysed. Binary regression models were adjusted for age, gender and Townsend deprivation score. There was then detailed assessment of the primary care records after a 6-year interval.

Results A 'U-shaped' relationship was found between sleep duration and incidence of many metabolic diseases, as well as mental illnesses such as depression. Fragmented sleep and both short and long sleep duration were associated with