P026

SLEEP DURING THE TRANSITION TO SHIFT WORK: PRELIMINARY FINDINGS OF A LONGITUDINAL FIELD STUDY OF COMMENCING PARAMEDICS

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Paramedics are at increased risk of occupational injuries, mental illness and poor health outcomes. Little is known however about the role of poor sleep in such outcomes and the way in which sleep may change as an individual commences work as a paramedic. The aim of the present study is to investigate changes in sleep as paramedics commence work.

As part of an ongoing, longitudinal study of Australian paramedics, participants undertake a baseline assessment prior to commencing work and a follow up every three months for a year. At each time point paramedics wear an actigraph (GENEActiv) for seven days, and complete an online survey including the Pittsburgh Sleep Quality Index (PSQI). The present preliminary analysis utilised linear mixed models to test the effect of commencing work as a paramedic on participants' sleep quality.

Preliminary results from the first cohort of recruits are reported (n=9 commencing paramedics, mean age (+SD) = 25.2±4.4, 56% female). There was a significant increase in PSQI scores from baseline (T0: 2.4±1.4) to three months (T1: 5.2±3.9) ($F(1, 8) = 5.47$, $p = 0.05$). The percentage of individuals with clinically poor sleep (PSQI ≥5) increased from 0% (n=0) at T0 to 56% (n=5) at T1.

Commencing paramedics report significantly poorer sleep quality compared to their pre-commencement levels. Interestingly, baseline PSQI scores indicate no participants were experiencing clinically defined poor sleep. However, at follow-up over half the sample reported clinically defined poor sleep. Findings of objective sleep and wake outcomes are anticipated for the meeting in October.

P027

THE CLINICAL ROLE AND OUTCOMES OF NON-INVASIVE VENTILATION IN MOTOR NEURON DISEASE: AN AUSTRALIAN TERTIARY HOSPITAL EXPERIENCE

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Introduction: In motor neuron disease (MND), non-invasive ventilation (NIV) in patients who develop respiratory muscle weakness improves both quality of life and survival. This study aimed to evaluate the current practice and outcomes of NIV use in MND patients in an Australian tertiary hospital.

Methods: The medical records of all MND patients who attended a specialist multidisciplinary clinic requiring NIV treatment between January 2015 and January 2020 were retrospectively analysed.

Progress to date: Forty-five patients have been analysed with a mean age at time of NIV commencement of 61±10(SD) years, 67% were male, 33% were current or past smokers and 7% had OSA with previous CPAP use. MND onset was limb in 58%, bulbar in 36% and respiratory muscle in 7%. Riluzole was prescribed in 47% and PEG/RIG insertion performed in 47%.

At time of NIV commencement, 82% were symptomatic and 47% hypercapnic. No patient was commenced based on functional testing alone.

NIV adherence (usage ≥4hours/night) was observed in 80%. NIV non-adherence was associated with bulbar subtype ($p=0.02$) and empirical NIV initiation ($p<0.01$) on univariate analysis.

Average survival from NIV commencement was 17±22(SD)months. Average survival on NIV in adherent patients was 19±24(SD) months and non-adherent patients was 2±2(SD)months, although this did not reach statistical significance ($p=0.1$).

Intended outcome & impact: Overall clinical practice and outcomes of NIV use in this study is comparable to literature. The factors influencing NIV tolerance and adherence require further study to optimise outcomes in MND patients with respiratory muscle weakness.

P028

THE NOX A1 AMBULATORY SYSTEM IS RELIABLE WHEN SELF-APPLIED

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Background: Home Sleep Apnea Tests (HSAT) increases access to SDB diagnostic testing (Safadi, 2014). A previous study defined a reliable HSAT if: ≥4hours total recording time, an intelligible position signal and respiratory effort, airflow and oximetry for at least 80% of the night were recorded, however, admits no standardized criteria in the literature (Domingo, 2010).

Aim: To test the reliability of a self-applied HSAT using the Nox-A1 ambulatory system (NOX Medical, Iceland).

Method: Patients self-applied the HSAT guided by industry produced video and written instructions. Signals for the HSAT included; two electro-occulagrams (EOG), two sub-mental electromyograms (EMG), a single modified frontal encephalogram (EEG), a lead I ECG, single leg anterior tibialis EMG, chest and abdominal inductance respiratory effort, nasal pressure airflow, WristOx 2 3150 SpO2 (Nonin Medical, Inc., USA) and 3-D accelerometer and body position sensor. Analysed with ProFusion PSG 4 (Compumedics Limited, Australia) after importing data into Nexus. 33 consecutive studies were recorded during lock-down. Recording satisfactory if SpO2 signal and EEG present >80% of study, it was considered a failure if doctor requested test repeat.

Results: 33 subjects, age 43.1 ± 13.7 years, BMI 27.4 ± 6.0 kg/m2, 66.6% male. 81.8% of studies satisfactory. 6% of studies needed a repeat in-lab PSG due to 1) loss of oximetry & EEG and 2) loss of EEG

Discussion: 6% doctor request repeat in-lab PSG is comparable to a study (Lloberes, 2001) of partially self-applied HSAT. Demonstrated good reliability with this self-applied COVID-safe method of HSAT.

P029

HOME VIDEO SLEEP RECORDING AS A SCREENING TOOL FOR PAEDIATRIC OBSTRUCTIVE SLEEP APNOEA

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Introduction: Polysomnography (PSG) remains gold standard for assessment of paediatric OSA, despite limitations. Home-based video sleep recordings offer a promising screening tool that would be relatively simple and inexpensive but have been minimally