Conclusion: In hospitalized COVID19 patients, OSA increases the probability of readmission and risk of mechanical ventilation, but this effect is likely due to higher comorbidity and obesity rates in OSA. In the future, we plan to examine larger samples of Veterans hospitalized with COVID19 and assess the effect of positive airway pressure treatment to understand the impact of OSA on COVID19 outcomes.
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0579

THE IMPACT OF INTRACRANIAL EEG ON SLEEP IS INDEPENDENT OF WHETHER A CRANIOTOMY WAS PERFORMED

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Introduction: Patients with refractory epilepsy are often evaluated with intracranial electrodes prior to resection. While depth electrodes can be placed through small burr-holes, grids and strips generally require large craniotomies. We have observed many differences in patient experience between these two populations. As sleep is crucial for many aspects of health and healing, our objective was to quantify whether subjects with craniotomies had different sleep patterns.
Methods: We analyzed data from N=47 patients with refractory epilepsy who underwent intracranial EEG monitoring at the University of Michigan (N = 23 with craniotomies). Sleep stages were scored by a certified sleep technician using simultaneously recorded scalp EEG. To quantify sleep patterns, we computed the fraction and average bout-length of each state of vigilance.
Results: No statistical difference was found between subjects with or without craniotomies for any measure ($p>0.4$, Wilcoxon Rank Sum). The median fraction of time awake for all subjects was 0.70 (0.65-0.74, 95% confidence interval). However, sleep architecture appeared altered, with median fraction of sleep time in NREM 1 being 0.07(0.06-0.09), NREM 2 being 0.16 (0.13-0.17), NREM 3 being only 0.01 (0.0-0.2) and REM being 0.05 (0.04-0.06). The median bout lengths for all stages of sleep was less than 5 minutes.
Conclusion: Intracranial monitoring appears to alter sleep similarly for both subjects who received craniotomies and those who had smaller burr-holes. The impact on sleep is not a significant factor when deciding between grid or depth electrodes.
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0580

SLEEP ATTITUDES AS A PREDICTOR OF RISK FOR METABOLIC SYNDROME IN COLLEGE FRESHMAN

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Introduction: Transitions into adulthood and starting higher education can be a challenge in habit formation of first-year students. Unhealthy habits related to eating, exercise, substance consumption and sleep can lead to rapid weight gain and conditions such as metabolic syndrome. Research has suggested that regardless of sleep knowledge, favorable sleep attitudes predict better sleep. Thus, our aim was to investigate whether sleep attitudes directly predicted risk for metabolic syndrome or indirectly via subjective and objective sleep measures.
Methods: First year college students (N=165) completed self-report measures and were brought into the lab for height, weight, body fat, blood sugar and fats, and blood pressure analyses. Participants wore FitBit Flex wristwatches to collect sleep data for seven consecutive days. Preliminary correlational analyses were conducted on sleep and obesity measures. Two separate path analyses were conducted to investigate whether there was a direct effect of sleep attitude on risk for metabolic syndrome or indirect via subjective sleep (sleep quality, duration and apnea) and objective sleep (sleep efficiency, duration and apnea). Two moderated mediations were conducted to investigate the effects of gender and age.
Results: The average age was 18.66 (SD=3.33) with the majority of the sample being female (63%) and White (55.9%). In our subjective sleep analysis, we found that sleep attitudes predicted quality and duration, but not apnea, and that the overall model yielded significance. In our objective model, only apnea was a significant predictor, as well as the overall model. The indirect relationships were not moderated by gender or age.
Conclusion: Poor sleep attitudes are related to risk for metabolic syndrome in college aged individuals. Future studies should further examine sleep attitudes as a modifiable risk factor to prevent disease.
Support (If Any): NA

0581

SLEEP PATTERNS AND "OFF"-TIME IN PATIENTS WITH PARKINSON'S DISEASE AND MOTOR FLUCTUATIONS

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Introduction: Sleep disruptions in patients with Parkinson's disease (PD) include difficulty falling/staying asleep, which can contribute to daytime sleepiness and overall worsening of health, mood, and quality of life. Although sleep disturbances in PD are multifactorial, nighttime motor symptoms can negatively affect sleep. To better understand how "OFF"-episodes affect sleep, post-hoc analyses were conducted using baseline data from two phase 3 studies of opicapone, an approved once-daily adjunctive treatment to levodopa/carbidopa (LD/CD) in patients with PD experiencing motor fluctuations.
Methods: In BIPARK-1 and BIPARK-2, participants recorded sleep/awake periods, "OFF"-time, and "ON"-time in 24-hour PD diaries. Sleep metrics included sleep duration, awakenings after sleep onset, and percent of sleep time spent awake. "OFF"-times included "OFF" before sleep (OBS), nighttime "OFF" (NTO), and early morning "OFF" (EMO). Data at baseline were pooled across treatment groups and analyzed descriptively. Mean values are presented with standard deviations (±SD).
Results: Baseline data from 1010 participants were pooled for analysis. Among 964 participants with available sleep metrics, mean total sleep duration was 7.6 (±1.5) hours and longest duration of uninterrupted sleep was 7.2 (±1.9) hours. 332/964

(34.4%) participants experienced an "OFF"-episode before going to sleep and the mean duration of this OBS was 1.8±1.2 hours. 158/964 (16.4%) participants awoke after sleep onset; of these, 128/158 (81.0%) awoke in an "OFF"-state and the mean duration of this NTO was 1.0 (±0.5) hours. Among these 128 participants, the mean number of awakenings was 1.3 (±0.7) and percent of sleep time spent awake was 15.4% (±9.6%). 898/1005 (89.4%) participants experienced an "OFF"-episode upon waking up in the morning and the mean duration of this EMO was 1.5 (±0.9) hours.

Conclusion: Results from this pooled analysis indicate that 34.4% of participants experienced an "OFF"-episode before going to sleep. Moreover, 81.0% of participants who woke up during the night were in an "OFF"-state upon awakening. Reducing "OFF"-episodes before and during the nighttime may help improve sleep in patients with PD, in turn potentially improving quality of life and daytime motor performance.

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0582

EFFECTS OF NON-MELANOMA SKIN CANCER ON SLEEP AND QUALITY OF LIFE AMONG RENAL TRANSPLANT RECIPIENTS

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Introduction: Non-melanoma skin cancer (NMSC) is highly prevalent in renal transplant recipients (RTR), due to the immunosuppressive effects of anti-rejection therapy after transplantation. Sleep disturbances can impair the immune system and enhance the repercussions of oxidative stress, which may play an important role in the carcinogenesis pathways. This survey aimed to compare data on quality of life and sleep in RTR with and without NMSC in a dermatology service.

Methods: The study comprised 126 individuals, distributed in the following groups: RTR with NMSC (n=42), RTR without NMSC (n=43) and healthy controls (n=41). Participants answered a set of questionnaires, including the WHOQOL-bref, Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), and the Berlin Respiratory Disorder questionnaire (BRD).

Results: The proportion of men were significantly higher among RTR (p=0.034). No statistically significant differences were observed regarding age, body mass index (BMI) and socioeconomic class. Transplantation living donors were statistically more frequent among RTR with NMSC (67% against 37% in the RTR without NMSC group; p=0.005). Among patients of the RTR with NMSC group, 9% had only basal cell carcinoma, 42% had only squamous cell carcinoma and 49% had both types of NMSC. There were no statistically significant differences on the final scores of the sleep questionnaires, except in 3 domains of the PSQI: sleep quality (p<0.001), sleep latency (p=0.01) and daytime dysfunction (p=0.02). Worse sleep quality was seen in the RTR with NMSC and controls, while worse sleep latency and more daytime consequences were found in both RTR clusters. All groups were predominantly composed of subjects with morning-type chronotype, low sleep quality and increased daytime sleepiness. In the WHOQOL, the physical domain was significantly impaired in the RTR groups (p<0.001).

Conclusion: Although all groups were mainly composed of individuals with excessive daytime sleepiness and low sleep quality, there were no differences regarding quality of life and sleep between RTR and controls. Further long-term examination of kidney transplant recipients and their sleep pattern are warranted, as poor sleep may have a link with immunosuppression and organism imbalance, as well as on quality of life of these individuals.

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0583

TOLERANCE AND FEASIBILITY OF DAYTIME BRIGHT LIGHT IN MEDICAL INTENSIVE CARE UNIT PATIENTS

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Introduction: Sleep and circadian disruption in critical illness are associated with poor outcomes. Normal circadian entrainment requires bright light exposure during the day and dim or no light during the night. Disruption of this diurnal light pattern can cause circadian abnormalities. To leverage this highly influential circadian entrainment cue, our study investigates the tolerance and feasibility of a daytime bright light (DBL) intervention in the medical ICU (MICU). We hypothesize that DBL is tolerable and has high fidelity and sustainability (i.e., feasibility).

Methods: Here we present the findings of a pilot randomized control trial of DBL in MICU patients. Patients were randomized to receive light for either 4 hours, 8 hours, or no light (usual care). For DBL groups, the light was turned on at 09:00 daily for 4 consecutive days. Metrics of tolerability (percentage of days patient agreed to light), fidelity (percentage of intended hours light was delivered), and sustainability (percentage of days light delivered out of days patients allowed light) were collected.

Results: Sixteen patients were enrolled; 5 were assigned to 8 hours of DBL, 9 were assigned to 4 hours of DBL, and 2 were assigned to usual care. Mean (standard deviation) patient age was 73 (10) and mean severity of illness, as determined by Acute Physiology and Chronic Health Evaluation II score, was 21(5). Patients who received 4 hours of DBL averaged 69% tolerability, 55% fidelity, and 94% sustainability. Patients who received 8 hours of DBL averaged 70% tolerability, 57% fidelity, and 90% sustainability. Further analysis of light delivery data showed that the 8-hour group was subject to a higher number of requests to delay light start or end light early and more care related breaks versus the 4-hour group.

Conclusion: Our study demonstrates the feasibility of a DBL intervention for MICU patients. While fidelity was lower than expected, the findings support that DBL is tolerable and sustainable in critically-ill patients. These findings have influenced the design of our ongoing randomized control trial further evaluating the impact of daytime bright light on circadian phase in critical illness.

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