8 min, 8 ≤ MSL ≤ 14 min and MSL > 14 min. We controlled for age, sex, body mass index, diabetes, smoking, alcohol use, hypnotic usage, AHI, and PSG-recording total sleep time.
Results: Among all the patients, compared to the MSL > 14 min group, the odds ratio (OR) for hypertension was 2.38 (95% confidence interval [CI], 1.19-4.80, $p < 0.05$) in the MSL < 8 min group. We analyzed the effect of MSL on the prevalence of hypertension in different gender, respectively. The prevalence of hypertension in male and female patients was 15.6% and 18.3%, respectively ($p > 0.05$). In male patients, significantly higher risk of hypertension was in MSL < 8 min group (OR = 6.71, [2.12-12.22], $p = 0.001$) compared to MSL > 14 min group. However, in female patients, no significantly higher risk for hypertension was found in MSL < 8 min (OR = 1.03, [0.38-2.84], $p > 0.05$) group than in MSL > 14 min group.
Conclusion: The results suggest that shortened MSL in patients with insomnia may be associated with increased risk of hypertension, especially in the male patients.

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COMPARISON OF PSG SLEEP PARAMETERS, MICRO-STRUCTURE AND SPECTRAL PROFILES, BETWEEN PATIENTS WITH PRIMARY INSOMNIA AND GOOD SLEEPER CONTROLS USING A LARGE COMPILATION OF PSG RECORDINGS FROM THREE CLINICAL TRIALS

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Introduction: PSG macro/micro/spectral sleep measures were compared between patients with primary insomnia (PI) and good sleeper controls (GSC), and between/within these groups by age category and/or gender.
Methods: Comparisons between PI and GSC were made using PSG recordings from 882 PI patients and 815 GSC collected in the sleep laboratory on baseline nights of 3 clinical trials from one drug development program. Correlations between subjective and macro/micro/spectral sleep measures were also evaluated.
Results: Macrostructure: The PI cohort had longer latency to persistent sleep and wakefulness after sleep onset (WASO) than GSC (expected by design), and shorter sleep time overall and in each sleep stage (1, 2, 3 = SWS and REM). PI males had more WASO than PI females, PI non-elderly (age < 65) had less WASO than PI elderly. Females had less Stage 1 but more SWS than males in both cohorts. Stage transitions depended on sleep period, gender, and cohort. Microstructure: PI had more mircoarousals and fewer spindles and K-complexes than GSC. Females had more K-complexes and microarousals than males in both cohorts. PI females had more spindles than PI males. PI non-elderly had more spindles and K-complexes than PI elderly. Power Spectra: Differences between PI and GSC depended on age, gender, and sleep period. Power was higher for females than males regardless of age, frequency or cohort, and greater between genders than between cohorts. Subjective sleep: PI rated sleep worse than GSC, but there were no differences between genders or age categories within cohort. Correlations between subjective and macro/micro/spectral sleep measures were modest.
Conclusion: Analysis of a large EEG database revealed differences between PI and GSC that were dependent on age, gender, and sleep period, thus providing new information on sleep EEG in patients with primary insomnia.

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SEPARATED INSOMNIA SEVERITY INDEX (ISI) DISTINGUISHES TWO PHENOTYPES OF SHIFT WORK DISORDER

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Introduction: Most patients meeting diagnostic criteria for SWD report insomnia. At the same time, 20-25% of the general population has insomnia. We hypothesize that a subgroup of SWD patients experience sleep difficulties primarily related to circadian misalignment, while another subgroup has an insomnia disorder per se precipitated by shift work.
Methods: 35 night workers participated in an overnight phase and MSLT assessment. Subjects with a history of insomnia or other sleep disorders prior to shift work were excluded. At 17:00, each subject completed an Epworth Sleepiness Scale (ESS) and two ISI scales: one specific to nighttime/off-shift sleep (ISI-N) and the other specific to daytime/on-shift sleep (ISI-D). Questions were identical to the standardized ISI, but instructions referred specifically to either daytime or nighttime sleep. 12 subjects with normal scores on all scales were classified as controls. 12 subjects with ESS < 10 and ISI-D ≥ 10 were classified "alert insomniacs" (AI). 11 subjects with ISI-D ≥ 10 and ESS ≥ 10 were classified "sleepy insomniacs" (SI).
Results: AI showed elevated ISI scores with no significant difference between ISI-D (14.67 ± 3.17) and ISI-N (11.42 ± 6.93, $p > .10$), indicating sleep disturbances even during nighttime sleep. In contrast, SI had significantly lower ISI-N scores (9.18 ± 6.73) than ISI-D scores (14.27 ± 4.81, $p < .001$), indicating they sleep better at night. Nocturnal five-nap MSLT scores (22:30-06:30) were not significantly different between AI (7.8 ± 5.1) and controls (8.1 ± 3.4), but scores among the SI group were significantly lower (3.1 ± 3.0, $p < .01$).
Conclusion: Use of a separated day/night ISI distinguishes between two insomnia phenotypes of SWD and may assist in the clinical management of the disorder. The insomnia/excessive sleepiness phenotype is associated with normal sleep during the night and pathological sleepiness, while the insomnia-only phenotype shows no difference in sleep disturbances between nocturnal and diurnal sleep. Patients with elevated scores on both scales may benefit from insomnia treatment in addition to phase alignment.
Support (If Any): This study is supported by grant 1K01OH009996-03 from CDC/NIOSH.

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SPEED AND TRAJECTORY OF CHANGES OF INSOMNIA SYMPTOMS DURING ACUTE TREATMENT WITH COGNITIVE-BEHAVIORAL THERAPY, SINGLY AND COMBINED WITH MEDICATION

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Introduction: Most randomized clinical trials of cognitive behavioral therapy (CBT) and medication for insomnia typically focus on sleep changes occuring from baseline to post treatment (usually a 4- to 8-week period). However, there is little information about the trajectory of sleep changes over the course of short-term therapy. Information on the speed of recovery during initial treatment could be informative in studies comparing different combinations or sequences of medication and CBT.

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