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Sleep Watchers

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Dear Colleague,

We hope this quarter's newsletter finds everyone in good health and spirits. As always we genuinely appreciate your support and look forward to continuing to help you improve the quality of life for your patients.

Please let us know if you would like to see a specific topic covered in our next issue. It is our goal to provide as much information as possible to better serve your patients. We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Best Regards,

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Obstructive Sleep Apnea and Risk of COVID-19 Infection, Hospitalization and Respiratory Failure

Matthew B Maas, Minjee Kim, et al.
Sleep Breath 2021 Jun;25(2):1155-1157

The authors wanted to study the relationship between OSA and risk of COVID-19 infection and disease severity, identified by the need for hospitalization and progression to respiratory failure. The investigators queried the electronic medical record system for an integrated health system of 10 hospitals in the Chicago metropolitan area to identify cases of COVID-19. Comorbidities and outcomes were ascertained by ICD-10-CM coding and medical record data. The authors evaluated the risk for COVID-19 diagnosis, hospitalization, and respiratory failure associated with OSA. They used appropriate statistical analysis, adjusting for diabetes, hypertension, and BMI to account for potential confounding in the association between OSA, COVID-19 hospitalization, and progression to respiratory failure.

The auhotrs identified 9405 COVID-19 infections, among which 3185 (34%) were hospitalized and 1779 (19%) were diagnosed with respiratory failure. OSA was more prevalent among patients requiring hospitalization than those who did not (15.3% versus 3.4%), and among those who progressed to respiratory failure (19.4% versus 4.5%. After adjustment for diabetes, hypertension, and BMI, OSA was associated with increased risk for hospitalization and respiratory failure. *Patients with OSA experienced approximately 8-fold greater risk for COVID-19 infection compared to a similar age population receiving care in a large, racially, and socioeconomically diverse healthcare system. Among patients with COVID-19 infection, OSA was associated with increased risk of hospitalization and approximately double the risk of developing respiratory failure.*

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Pulse Rate Variability May Predict Stroke in Obstructive Sleep Apnea

Bryant Moeller
Obstructive Sleep Apnea-OSA May 3, 2021

Pulse rate variability as detected by pulse oximetry could serve as a useful biomarker for stroke risk stratification in patients with obstructive sleep apnea (OSA), according to the results of a recent study published in the American Journal of Respiratory Critical Care Medicine. Researchers measured pulse rate variability via overnight oximetry during diagnostic sleep studies in patients with OSA having 5 or more events per hour. The primary study

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Pulse Rate...*continued*

outcome was first episode of stroke. Standard deviation of normal-to-normal beat intervals and successive normal-to-normal differences were used to retrospectively correlate pulse rate variability to health outcomes.

Among the 6075 stroke-free patients with OSA, the mean age was 62 years and the average apnea-hypopnea index was 28 events per hour. A total of 2536 patients were correctly treated via positive airway pressure and 3539 patients were nonadherent to positive airway pressure or did not receive any active OSA therapy. After the median follow-up of 6.5 years, 459 patients had died, and 177 patients had received a diagnosis of stroke. Overall, patients with lower sympathetic/parasympathetic tone (LF/HF ratio) were at higher risk for stroke. The association appeared to be stronger in patients with severe OSA. *The authors concluded that "Individuals with OSA, particularly those with severe disease, who demonstrate low sympathovagal balance (LF/HF) are at increased risk [for] stroke. [Pulse rate variability] indices derived from pulse oximetry data, readily available in routine sleep recordings, might provide a useful biomarker for stroke risk stratification."*

Effect of Evening Blue Light Blocking Glasses on Subjective and Objective Sleep in Healthy Adults

Jeremy A. Bigalke, Ian M. Greenlund, et al.
Sleep Health 2021 Aug;7(4):485-490

Evening blue light has been shown to suppress melatonin, which can negatively impact sleep quality. The impact of evening blue light blocking (BLB) interventions on sleep remains ambiguous due to lack of randomized control trials. This study tests the hypothesis that BLB glasses improve subjective and objective sleep in a population of healthy adults. This was a two-week, randomized study including twenty healthy adults (11men, 9 women, mean age 32, body mass index 28 (± 4 kg/m2).

Following a 1-week run-in baseline (ie, no glasses), participants were randomized to 1-week of BLB or control (ie, clear lens) glasses. Upon finishing the 1-week intervention, participants crossed over to the opposite condition. In both conditions, glasses were worn for 7 consecutive days from 6 PM until bedtime. Objective sleep parameters were obtained using wrist actigraphy. Subjective sleep measures were assessed using sleep diaries. Karolinska Sleep Diaries were used to assess perceived sleep quality. BLB reduced subjective sleep onset (21 vs 24 minute) and awakenings (1.6 vs 2.2) compared to the control condition. In contrast, objective measures of sleep were not significantly impacted. In fact, our primary outcome variable of total sleep time (TST) tended to be paradoxically shorter in the BLB condition for both subjective (468 vs 480) and objective (433 vs 449 minute TST. *The authors concluded that Blue Light Blocking Glasses did not improve objective measures of sleep time or quality in healthy adults.*

Switching to Bilevel PAP Saves 56% of Patients from Therapy Termination

CPAP & PAP Devices, Obstructive Sleep Apnea July 13, 2018

A new study reveals that shifting patients who are struggling with adherence to positive airway pressure (PAP) therapy to a more advanced bilevel device in the first 90 days of treatment is an effective tool for achieving adherence in well more than half of such cases. This research, sponsored by ResMed, was presented at SLEEP 2018. Patients diagnosed with sleep apnea are usually prescribed a PAP device that provides either continuous (CPAP) or auto-adjusting (APAP) pressure. A bilevel device delivers two distinct pressures, one for inhalation and one for exhalation. Physicians may prescribe bilevel for patients who are pressure intolerant or have continued evidence of apnea at higher pressures.

In this "bilevel rescue" study, ResMed compared 1,496 non-compliant patients (as defined by US Medicare guidelines) who switched to bilevel therapy and found that compliance was achieved by:

- 58.5% of patients who switched before day 60
- 54.2% of patients who switched between days 60–90
- 56.8% of patients overall

"Finding the right mode of therapy made all the difference to those patients who are struggling with initial adherence to therapy," says ResMed chief medical officer Carlos M. Nunez, MD, in a release. *"This strongly suggests that bilevel devices provide a powerful alternative therapy that physicians and HMEs [home medical equipment providers] can utilize to help improve non-compliant patients' treatment experience and outcomes."*

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