Dear Colleague,

Each year we continue to make advances in sleep medicine to more conveniently diagnose and treat your patients with sleep disorders. Recently, our sleep center has been accredited by the American Academy of Sleep Medicine (AASM) to perform home sleep apnea testing. This home study option should improve the availability and comfort of sleep testing for your patients.

Another advancement is the treatment of sleep apnea using an oral appliance. Oral appliance therapy may be appropriate for some patients with mild to moderate obstructive sleep apnea and may be better tolerated than CPAP therapy.

Our sleep center takes pride in ensuring that your patients receive comprehensive care with close follow-up. Through this quarterly newsletter, we wish to share with you recent findings in sleep medicine which may be relevant to your practice. We also hope to establish open lines of communication with your office.

We appreciate the trust you place in us by allowing us to participate in the care of your patients. If you have any questions please do not hesitate to call me directly.

Sincerely,

Wesley Elon Fleming, M.D.

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**Is Obstructive Sleep Apnea an Independent Risk Factor for Stroke?**

Capampangan D.J., Welilik K.E.

Obstructive sleep apnea (OSA) is associated with hypertension, atrial fibrillation, coronary artery disease, congestive heart failure, and diabetes. These disorders are also risk factors for stroke. The purpose of this study was to determine whether OSA increases the risk of stroke independently of other cerebrovascular risk factors.

The objective was addressed through the development of a structured critically appraised topic. This evidence-based methodology included a clinical scenario, structured question, search strategy, critical appraisal, results, evidence summary, commentary, and bottom line conclusions. Participants included consultant and resident neurologists, a medical librarian, clinical epidemiologists, and content experts in the field of sleep medicine and vascular neurology.

A large observational cohort study was selected and appraised to address this prognostic question. The unadjusted analysis revealed that OSA (apnea-hypopnea index >5) was associated with stroke or death from any cause (hazard ratio, 2.24; 1.30-3.86). The adjusted OSA analysis retained a statistically significant association with stroke or death (hazard ratio, 1.97; 1.12-3.48). In separate unadjusted analyses, OSA was associated with death and stroke with relative risks of 1.68 (1.10-2.25) and 5.16 (3.72-6.60), respectively. The investigators concluded that OSA independently contributes to stroke risk.

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**Obstructive Sleep Apnea: Role in the Risk and Severity of Diabetes**

Pamidi S. Aronsohn RS, et al.
Best Pract Res Clin Endocrinol Metab. 2010 Oct;24(5):70-5

Obstructive sleep apnea (OSA) is a treatable sleep disorder that is pervasive among overweight and obese individuals. Current evidence supports a robust association between OSA and insulin resistance, glucose intolerance and the risk of type 2 diabetes, independent of obesity. Up to 83% of patients with type 2 diabetes suffer from unrecognized OSA and increasing severity of OSA is independently associated with poorer glucose control. Evidence from animal and human models that mimic OSA supports a potential causal role for OSA in altered glucose metabolism.
Diabetes ...continued
Robust prospective and randomized clinical trials are still needed to test the hypothesis that effective treatment of OSA may prevent the development of type 2 diabetes and its complications, or reduce its severity. Type 2 diabetes is occurring at alarming rates worldwide and despite available treatment options, the economic and public health burden of this epidemic remains enormous. OSA might represent a novel, modifiable risk factor for the development of prediabetes and type 2 diabetes.

The Effects of Continuous Positive Airway Pressure on Prehypertension and Masked Hypertension in Men With Severe Obstructive Sleep Apnea
Drager LF, Pedrosa RP, et al.
Hypertension. 2011 Jan 17

Obstructive sleep apnea and hypertension are common conditions that frequently coexist. Continuous positive airway pressure (CPAP) reduces blood pressure in patients with obstructive sleep apnea and sustained hypertension. However, the impact of CPAP on patients with obstructive sleep apnea and prehypertension and masked hypertension, conditions associated with increased cardiovascular risk, is unknown. Thirty-six male patients (age, 43±7 years; body mass index, 28.8±3.0 kg/m²) with untreated severe obstructive sleep apnea (apnea-hypopnea index, 56±22 events/hr on polysomnography) with diagnostic criteria for prehypertension and/or masked hypertension, based on office and 24-hour ambulatory blood pressure monitoring, respectively, were studied. The patients randomized to no treatment (control; n=18) or CPAP (n=18) for 3 months had similar frequency of prehypertension and masked hypertension at study entry.

There were no significant changes in blood pressure in patients randomized to the control group. In contrast, patients randomized to CPAP presented significant reduction in office systolic (from 126 to 121 mm Hg) and a trend for diastolic blood pressure (from 75 to 73 mm Hg) as well as a significant decrease in daytime and nighttime systolic and diastolic blood pressure. There was a significant reduction in the frequency of prehypertension (from 94% to 55%) and masked hypertension (from 39% to 5%) only in the CPAP group. In conclusion, effective CPAP therapy promotes significant reduction in the frequency of prehypertension and masked hypertension by promoting significant blood pressure reductions in patients with severe obstructive sleep apnea.

Clinical Impact of Screening for Sleep Related Breathing Disorders in Atrial Fibrillation
Altmann DR, Ulmer E, et al.
Int J Cardiol. 2010 Oct 12 (11) 453-9

The purpose of this study was to quantify daytime symptoms in atrial fibrillation (AF) patients with and without sleep related breathing disorders (SRBD). SRBD are common in patients with AF but little is known about daytime symptoms among those with SRBD. Patients with AF admitted to clinics of two tertiary referral hospitals for a variety of different cardiovascular diseases were screened with a trans-nasal airflow measurement device allowing measurement of the apnea-hypopnea-index. Data on cardiac risk factors, left ventricular ejection fraction (LVEF) and cardiac medication were collected. Presence of SRBD was defined as an AHI≥15/h. The Epworth sleepiness scale (ESS) was used to quantify daytime symptoms.

Of 102 screened patients 8 were excluded due to device malfunction (n=1), dislocation of nasal cannula (n=6), or hyperthyroidism (n=1). Among the remaining 94 patients, 40 (43%) were diagnosed with SRBD. Patients with and without SRBD had similar age, body mass index, LVEF and cardiac medication. The prevalence of coronary artery disease was higher in patients with SRBD than in those without (50 vs. 17%). ESS score was low and similar in both groups (no SRBD: median 4, interquartile range (IQR) 2-4 vs. SRBD: 5, IQR 3-8). Only 6/40 (5%) of the patients underwent overnight polysomnography and 2 (5%) started CPAP ventilation during follow-up. The authors concluded from the results of this study that even though SRBD are common in patients with AF, the prevalence of daytime symptoms is rare. Consequently, most patients will not initiate CPAP ventilation after positive SRBD screening.