Sleep Services of Maryland

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Are Headaches a Result of Sleep Apnea?

Many people come to our office believing their headaches to be the cause of their sleeping problems. In fact it is the other way around and their headaches are a result of poor sleep. There are two types of sleep apnea: Obstructive and Central. Obstructive Sleep Apnea (OSA) is caused by a blockage in the airway and Central Sleep Apnea (CSA) is a result of the brain failing to signal the muscles to breathe. Both restrict oxygen and blood flow to muscles and the brain.

So what causes headaches? Those with sleep apnea stop breathing during sleep, restricting oxygen and causing a buildup of carbon dioxide in the blood. This alteration in blood oxygen levels affects the nervous system and blood flow to the brain, causing morning headaches and affecting memory and mood.

It was also found that those with frequent headaches are 2.5 times more likely to snore than those who do not, proving that lack of oxygen during sleep causes chronic headaches.

Sleep apnea should not be taken lightly, and if left untreated can lead to a heart attack or stroke. Meanwhile, the uncomfortable symptoms like chronic headaches, migraines or fatigue are just as destructive to your health. Contact Sleep Services of Maryland if you need to schedule a patient for sleep study.

> ***"Studies conducted on patients with sleep apnea found that 67% suffered from frequent headaches"***

Sleep Apnea / Cardiovascular Consequences

Patients with obstructive sleep apnea (OSA) experience repetitive episodes of apnea or reduced inspiratory airflow due to upper airway obstruction during sleep. These events are associated with intermittent asphyxia (ie, concomitant hypoxemia and hypercapnia) and usually provoke an arousal from sleep. The arousal is associated with restoration of upper airway patency and ventilation.

> ***"Current data suggests that OSA increases the risk of developing cardiovascular diseases and its treatment can diminish such risk"***

Intermittent hypoxia and the arousal response are likely the main pathophysiologic factors associated with oscillation of the systemic and pulmonary arterial blood pressures, heart rate, and cardiac function. These hemodynamic changes can be dramatic, even among patients who are normotensive when awake. In one study, the post-apneic mean arterial blood pressure ([1/3 x systolic blood pressure] + [2/3 x diastolic blood pressure]) increased to 105 mmHg from a baseline of 95 mmHg. The evidence suggests that these repetitive hemodynamic oscillations contribute to cardiovascular disease, although the pathophysiology is incompletely understood.

In patients with obstructive sleep apnea (OSA), repetitive apneas expose the cardiovascular system to cycles of hypoxia, exaggerated negative intrathoracic pressure, and arousals. These noxious stimuli can, in turn, depress myocardial contractility, activate the sympathetic nervous system, raise blood pressure, heart rate, and myocardial wall stress, depress parasympathetic activity, provoke oxidative stress and systemic inflammation, activate platelets, and impair vascular endothelial function. Epidemiological studies have shown significant independent associations between OSA and hypertension, coronary artery disease, arrhythmias, heart failure, and stroke. In randomized trials, treating OSA with continuous positive airway pressure lowered blood pressure, attenuated signs of early atherosclerosis, and, in patients with heart failure, improved cardiac function. Current data therefore suggest that OSA increases the risk of developing cardiovascular diseases, and that its treatment has the potential to diminish such risk.

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Opioid Medications / Sleep Disordered Breathing

An estimated 28 million Americans have sleep complaints due to chronic pain syndromes. Among patients with chronic pain, more than 50% experience sleep disturbances. Some reports say as many as 70%-88% of patients with chronic pain report sleep trouble. Sleep disturbance shows an independent and linear correlation with pain severity, even after controlling for health measures and sleep habits. The incidence of sleep-disordered breathing after both short and long-term opioid use is well established.

Narcotics, and in particular opioids, have several effects on respiratory physiology, which are more pronounced during sleep. They decrease central respiratory patterns, respiratory rate, and tidal volume. They also increase airway resistance and decrease the patency of the upper airways. This may lead to ineffective ventilation and upper airway obstruction in susceptible individuals. These agents can produce irregularities in normal breathing patterns. Irregular respiratory pauses and gasping may lead to erratic breathing and significant variability in respiratory rate and effort. This ataxic, or Biot breathing, is observed in the majority of patient with long-term opiate use. Several studies have shown a marked increase in sleep-disordered breathing with both acute and chronic use of narcotics, regardless of the agent used, dose, duration of therapy, or individual risk factors for OSA (Obstructive Sleep Apnea) and CSA (Central Sleep Apnea).

The treatment of opioid-induced sleep disordered breathing is similar to that for other etiologies of OSA and CSA, with positive airway pressure (PAP) being the most efficacious therapeutic option. Improvement, or even resolution, of sleep-disordered breathing after cessation of medication has been frequently reported. Both oral appliances and uvulopalatopharyngoplasty (UPPP) have also been shown to be beneficial in these individuals. However, unlike in other patients with sleep apnea, apneas may be more refractory to PAP therapy among those with opioid-induced OSA. The common coexistence of central events may require further management. Although CSA may resolve or diminish with continuous PAP (CPAP), persistent events often require bilevel PAP (BiPAP) or adaptive servoventilation (ASV).

> ***"Several studies have shown a marked increase in sleep-disordered breathing with both acute and chronic use of narcotics"***

It is important to realize that chronic pain relief can be achieved through the use of opioids without causing harmful effects on sleep, but this requires regular assessments of sleeping activity and appropriate dose adjustments/titration. It seems clear that long-term narcotic use causes, precipitates, or exacerbates sleep-disordered breathing; as the use of these agents continues to grow, so will the number of individuals with opioid-induced apnea. Prompt recognition and appropriate treatment will probably improve outcomes and quality of life. ***If you have patients that are using opioids for the management of chronic pain please contact Sleep Services of Maryland for an assessment of their sleep activities.***

*This article has been adapted from The Association of Obstructive Sleep Apnea and Chronic Pain. *Medscape*. May 24, 2013

Stress and Sleep Disorders

Seven out of ten adults in the United States say they experience stress or anxiety daily, and most say it interferes at least moderately with their lives. About one-third report persistent stress or excessive anxiety daily or that they have had an anxiety or panic attack. Seven out of ten of those adults say they have trouble sleeping.

The majority of adults with a stress-induced sleep problem experience it at least once per week, and more than half experience it at least several times a week. Three-fourths of adults whose sleep is affected by stress or anxiety say that their sleep problems have also increased their stress and anxiety. 54 percent say that stress or anxiety increased their anxiety about falling asleep at night, and 52 percent of men and 42 percent of women reported that it affected their ability to remain focused the next day.

People who are under considerable stress can have insomnia. In the case of insomnia related to stress, alleviating the stress should alleviate the insomnia. Stress causes insomnia by making it difficult to fall asleep, to stay asleep, and by affecting the quality of your sleep. Stress causes hyperarousal, which can upset the balance between sleep and wakefulness. If your patients are having difficulty sleeping at night a sleep study may be indicated.

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