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Obstructive Sleep Apnea and its Relationship to Cardiovascular Disease

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Introduction

As the medical community continues to enrich its understanding of obstructive sleep apnea (OSA), it also expands its knowledge in OSA’s eight connection to cardiovascular disease. OSA is a respiratory disorder recognized by repetitive closure of the upper airway during sleep and, consequently, causes a recurrent cycle of sleep disturbances and intermittent hypoxia (Sateia, 2014). OSA has demonstrated its capability of increasing risk for cardiovascular diseases including: hypertension, ischemia heart disease, cerebral vascular accidents, arrhythmias, and congestive heart failure (Martin, Carreno, Vitaro, & Agusti, 2005). Signs and symptoms of this disease can be overlooked and the long term cardiovascular effects can be detrimental. It is important for advanced practitioners to recognize the severity of OSA and understand its relationship with cardiovascular disease. The purpose of this presentation is to educate current and future practitioners on the key components of OSA and its links to cardiac disorders. The pathophysiology of the disease, related signs and symptoms, and the implications for nursing care will be discussed.

Underlying Pathophysiology

Over 18 million American adults suffer from sleep apnea and routinely snoring children have a sleep apnea prevalence as high as 20%. OSA increases the risk of heart failure by up to 40%, the risk of stroke by up to 80% and risk of coronary heart disease up to 50% (Kasai & Bradley, 2011). Snoring is often overlooked by patients and their significant others as a natural sleeping habit, however, the habitual impudence of breathing causes a significant deficit in a patient’s oxygenation and, as previously explained causes a surge in SNS which leads to a number of cardiovascular diseases. Risk factors for OSA such as facial deformities, male gender, and large tonsils need to be carefully considered when differentiating normal snoring compared to OSA. Close to 40% of America is considered obese and nearly two-thirds of the people who have OSA are obese (Jean-Louis et al., 2008). It is well documented that obesity itself is significantly linked to cardiovascular disease and with the combination of OSA, the cardiovascular consequences can quickly become life threatening.

Signs & Symptoms

OSA occurs during sleep, when the upper airway becomes blocked repeatedly and or completely stops airflow. As a result, the following signs and symptoms are often detected.

• Throbbing or absent breathing during sleep
• Frequent loud snoring
• Gasping for air during sleep

Signs

• Dry mouth or headaches especially when waking
• Bounding Pulse
• Perhaps most importantly, when nurses are caring for a patient with OSA, they need to be aware of the frequent and severe cardiovascular complications of OSA can effect the plan of care and needs to be monitored carefully.

• Chest pain

References


Obstructive Sleep Apnea Symptoms, Causes, Treatments, and Natural Remedies, 2018

Implications for Nursing Care

• Nurses can positively impact the outcomes of patients with OSA by first educating the importance of modifying their risk factors of OSA: losing weight, limiting alcohol before bed, not sleeping back side down.
• Nurses are at the forefront in healthcare and have a significant amount of patient contact. Nurses need to be vigilant when monitoring for S&G of OSA and especially with differentiating snoring from OSA. If sleep apnea is suspected, nurses need to advocate for a diagnostic sleep study.
• Early treatment for OSA involves losing weight, changing sleeping positions, and monitoring sleep patterns.
• If OSA persists, a CPAP machine may be necessary to keep a patient awake and breathing.
• Nurses need to be aware that CNP is an effective tool, however, it is uncomfortable and patient adherence is crucial. Nurses need to truly investigate CNM compliance for necessity.
• If there is failure to comply or fail to improve symptoms, nurses may advocate for surgical treatment such as an implantation of a geniculate nerve stimulator.
• If these fail, the patient would need to be referred to a specialist for intervention.

Conclusion

• In conclusion, OSA is a common respiratory disorder that leads to significant cardiovascular disease.
• Being aware of the importance of early recognition and treatment can help to reduce the complications associated with OSA.
• By understanding the pathophysiology surrounding sleep apnea, healthcare providers can work to ensure they are practicing in a way that is evidenced based and precise.
• Nurses should be aware of the potential impact and complications associated with OSA as the evidence continues to grow regarding the potential cardiac risks of OSA.