

MULTI-DISCIPLINE APPROACH TO OSA (OBSTRUCTIVE SLEEP APNEA)

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SUMMARY

The most common type of sleep apnea is obstructive sleep apnea. In this condition, the airway collapses or becomes blocked during sleep. This causes shallow breathing or breathing pauses. Sleep apnea often goes undiagnosed. OSA usually can't be detected during routine office visits. Also, no blood test can help diagnose the condition.

Cardiology and OSA link – How many of your patients suffer from OSA?

- ❖ 35% of the general cardiovascular population
 - ❖ 60% of patients with atrial fibrillation
 - ❖ 50% of patients with hypertension
 - ❖ OSA is associated with increased blood pressure
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SUPPORTING ARGUMENTS

Cardiovascular Disease

- The AHA recommends screening for Sleep Disordered Breathing in patients who present with HF
- The presence of OSA confers a 2.4-fold increase in the diagnosis of heart failure
- Atrial fibrillation patients have a recurrence rate of 82%, if sleep disordered breathing is left untreated
- Patients with left ventricular systolic dysfunction have as much as a 40% prevalence of OSA.

Hypertension

- The Seventh Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure has named OSA a leading cause of hypertension
- Patients with even mild OSA are three times more likely to develop new hypertension
- Patients with CAD have more severe pulmonary hypertension with concomitant OSA

Co-Morbidities

- Treating OSA decreases morbidity and mortality
- After effective treatment of OSA, the incidence of cardiovascular disease decreases
- Treating OSA alleviates hypertension

ADDITIONAL MATERIAL AND REFERENCES

Screening for Sleep Disordered Breathing Patients with HF-AHA

“40 Percent of CHF patients have frequent respiratory events during sleep, as sign of sleep apnea. Fewer than 5% are being tested. Screening for Sleep Apnea is recommended given the current lack of awareness regarding the link between sleep apnea and heart failure.”

Ohio State University Sleep Center Study

Source: The Ohio State University Medical Center

Dr. William Abraham (Director of Cardiovascular Medicine)

“Sleep apnea commonly accompanies heart failure, and can be treated. A disorder expert believes that all failure patients should be screened.” Sleep apnea screening urged for all heart failure patients.”

University of Maryland, Baltimore

Source: Heart Advisor, April, 2007

Studies from U.S. have reported that sleep apnea is common in heart failure. A sleep study should be performed in every patient with CHF and a left ventricular ejection fraction of <40%.

Sleep Disordered Breathing and Risk Factors

Source: Current Opinion in Pulmonary Medicine

Treating OSA Decreases Morbidity and Mortality

“Treatment of OSA has been shown not only to improve quality of life but some studies suggest that successful treatment may reduce morbidity and mortality.”

Benefits of obstructive Sleep Apnea Treatment in Coronary Artery Disease

Source: American Heart Journal 2004

“Patients treated for OSA had a statistically significant decreased number of cardiac deaths on follow-up when compared with untreated OSA patients (95% confidence interval).”

Treatment of Obstructive Sleep Apnea is Associated with Decreased Cardiac Death

Source: Department of Internal Medicine, Mayo College of Medicine, Rochester, Minnesota

“Treatment of OSA is associated with a reduction in a number of cardiac deaths. Screening for and treating OSA in patients with OSA may result in decreased cardiac death.”

Treatment of Obstructive Sleep Apnea

Source: Division of Pulmonary Care, Rochester, Minnesota

Patients with OSA More Likely to Develop New Hypertension

“A recent large, cross-sectional study indicates that sleep apnea is independently associated with hypertension. Even stronger evidence of a link was obtained in a new prospective study.”

Sleep Apnea and Hypertension *Source: Sleep Heart Health Study (SHHS), sponsored by the National Heart, lung, and Blood Institute.*

“Observations from a recent study strongly suggest that not only is OSA associated with increased prevalence of hypertension but increased risk for developing new hypertension. Effective

therapy of OSA can significantly reduce blood pressure, even in those patients with diagnosed hypertension.”

Sleep Disordered Breathing and the Heart Source: Robert D. Ballard, MD,
Medical Director, Sleep Disorders Center, National Jewish Medical Research Center,
University of Colorado Health Sciences Center

“About 50% of patients who have hypertension have OSA, and about 50% of patients who have OSA have essential hypertension. A growing body of evidence suggests that OSA is a major contributing factor in the development of essential hypertension.”

Treating OSA Improves Essential Hypertension and Quality of Life
Source: Donald S. Silverberg, M.D.

OSA is a Leading Cause of Hypertension

“The Sleep Heart Health Study showed the strongest relationship was between OSA and stroke/hypertension than any other cardiovascular disease.”

Obstructive Sleep Apnea
Source: Philip M. Gold, MD, MACP, Professor of Medicine,
Torrance Memorial Medical Center, Loma Linda Medical Center

“Data from the Wisconsin Sleep Cohort have shown that normotensive individuals with untreated sleep apnea will have a high likelihood for the development of new hypertension.”

Sleep Apnea as a Cardiovascular Risk Factor
Source: Boston University School of Medicine, Boston, MA

“Untreated Sleep Apnea is the leading cause for the development of Hypertension.”

Cardiac and Vascular Disease in OSA Hypertension and Atherosclerosis Section of Boston
Source: Virend K. Somers, MD, D Phil, University

Treating OSA Alleviates Hypertension

“Studies report that treatment of OSA reported reduction in mean systolic and diastolic blood pressure of approximately 10 mm Hg. These reductions are predicted to reduce stroke risk by 56% and coronary heart disease event risk by 37% and hypertension.”

Heartfelt Sleep
Source: Matthew T. Naughton, MD., FRACP

“OSA should be considered in all patients with hypertension. It should be remembered that hypertension is one of the strongest predictors of cardiovascular disease morbidity and mortality.”

Sleep Apnea Causes Daytime Hypertension
Source: Department of Preventive Medicine, University of Wisconsin Medical School

“Treatment of OSA stabilizes the upper airway, preventing collapse and the acute cardiovascular and hypertension consequences of OSA.”

Heartfelt Sleep; the evidence that OSA treatment may help prevent cardiovascular disease increases.
Source: Matthew T. Naughton, M.D.

Patients with CAD have more severe pulmonary hypertension with concomitant OSA

“Several well controlled studies suggest that about 20% of sleep apnea syndrome (SAS) patients will have chronic obstructive pulmonary disease (COPD) and the majority of these patients will have severe pulmonary hypertension.”

Long-Term Oxygen Therapy

Source: VA Medical Center, Baylor College of Medicine, Houston, Texas; Eugene C. Fletcher

“Individuals with OSA have a higher prevalence of pulmonary hypertension, which attenuates with treatment.”

Sleep-disordered breathing and Cardiovascular Health

Source: Current Opinion in Pulmonary Medicine; November, 2005

“Experience shows that OSA patients will have severe hypersomnolence associated with the OSA, dyspnea with the airways disease and pulmonary hypertension.”

Increased incidence of Coronary Artery Disease in Sleep Apnea.

Source: J. Carlson

Atrial Fibrillation

“This (OSA) raises blood pressure, lowers blood oxygen levels and stretches the walls of the atria, making them susceptible to irregular electrical rhythms”.

Obstructive Sleep Apnea Linked To Atrial Fibrillation

Source: Mayo Clinic, Dr. Somers

“Patients with untreated OSA have a higher recurrence of AF after cardioversion than patients without a diagnosis of sleep apnea. Appropriate treatment in OSA patients is associated with a lower recurrence of AF.”

Obstructive Sleep Apnea and the Recurrence of Atrial Fibrillation

Source: The Mayo Clinic, Rochester, MN

“AF recurred in 82 percent of the patients with untreated OSA compared to 42 percent in the treated OSA group.” The controls had a 53-percent recurrence rate.

Sleep Disorder Linked to Common, Serious Heart Rhythm Problem

Source: Virend Somers, M.D.

OSA Increases Diagnosis of Heart Failure

“A study in the New England Journal of Medicine, reports that people with obstructive sleep apnea (OSA) are more likely than people without OSA to have premature death from Coronary Artery Disease and Heart Failure.”

Obstructive Sleep Apnea: An Independent Risk Factor for CAD Death?

Source: Medscape Medical News 2007; The New England Journal of Medicine

“The findings in a recent large-scale study reveal that individuals with OSA, regardless of whether they are healthy or have CAD risk factors, have an increased risk of CAD and HF.”

Clinical outcomes after direct current cardioversion of tachyarrhythmias
Source: Cardiology Department

“In Patients with Heart Failure, untreated OSA is associated with an increased risk of death independently of confounding factors.”

Influence of Obstructive Sleep Apnea on Mortality in Patients with Heart Failure
Source: Sleep Research laboratory of Toronto

Left Ventricular Systolic Dysfunction with OSA

“A large population-based study identified OSA as an independent risk factor for HF. One potential stimulus to left ventricular remodeling that has received little attention is OSA. Furthermore, OSA places unique stresses on the interventricular septum.”

Left Ventricular Structural Adaptations to Obstructive Sleep Apnea in Dilated Cardiomyopathy.
Source: Mt. Sinai Hospital

“Findings of a recent investigated study of gastric bypass patients showed Obese patients with moderate or severe OSA have a higher prevalence of moderate or severe LVDD than those with no OSA or mild.”

Prevalence of Moderate or Severe LVD in Obese Persons.
Source: New York Medical College, Valhalla, N.Y.

“Hypertension is the single most important predisposing factor for development of LV hypertrophy and systolic and diastolic LV failure. Accordingly, the most obvious mechanism through which OSA could lead to the development is through hypertension. These cases suggest that the adverse effects of OSA can be sufficient to cause acute LV failure during sleep in susceptible individuals.”

Sleep Apnea and Cardiovascular Disease
Source: University of Toronto Center for Sleep and Chronobiology

Effective OSA Treatment

“Effective treatment of obstructive sleep apnea (OSA) may help decrease the incidence of coronary artery disease (CAD).”

Sleep Apnea and Heart Disease.
Source: Long Term Follow-up, Respiratory Journal, 2006; 28:596-602

“A study published by the American College of Chest Physicians, showed patients with OSA who were treated successfully had significantly fewer cardiovascular disease-related deaths and related events than untreated patients.”

Sleep therapy may protect against death from heart disease
Source: American College of Chest Physicians

“A recent study from Mayo College of Medicine reveals that patients treated for OSA had a statistically significant decreased number of cardiac deaths on follow-up when compared with untreated OSA patients.”

Treatment of Obstructive Sleep Apnea is Associated with Decreased Cardiac Death.
Source: Department of Internal Medicine, Mayo College of Medicine, Rochester, MN