

Sleep

New therapies for SDB & the consequences of not



As a relatively young specialty, sleep medicine is devising new therapies and testing them through clinical trials. At the same time, the field is focusing its efforts on linking the specific pathophysiology of sleep-disordered breathing (SDB) in a particular patient to the best therapy for that patient.

ATS 2012 will offer attendees that latest information from both trends in sleep medicine, as well as a review of the current state of the art for diagnosing and treating SDB in adults and children.

Through a PG course, “Current and Emerging Treatments for Sleep-Disordered Breathing,” and a scientific symposium, “No Pain, No Gain: Will Upper-Airway Exercise Training/Electrical Stimulation Work for Sleep Apnea?” ATS 2012 will feature presentations on new and experimental options in treating SDB, including end expiratory positive pressure and adaptive servo-ventilation devices, rapid maxillary expansion, upper airway exercises, bariatric surgery and hypoglossal nerve stimulation.

Hypoglossal nerve stimulation will be extensively covered during the conference, with four major talks and multiple abstracts being presented, according to Indu Ayappa, PhD, program chair of sleep and respiratory neurobiology.

“Multiple companies are looking at this technology, and three multicenter clinical trials are being conducted right now by device manufacturers,” she explains. “So there is a lot of excitement around this therapy and identifying those patients who would benefit from it.”

“Hypoglossal nerve stimulation doesn’t work uniformly, but it appears to help certain patients,” says James Rowley, MD, chair of the ATS Assembly of Sleep and Respiratory Neurobiology, who will facilitate a poster discussion on the topic. “During the International Conference, we will learn better who the appropriate patients for this therapy are and whether, for some, it might replace CPAP as the ‘gold standard’ therapy.”



Dr. Ayappa

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Dr. Rowley

Dr. Rowley will chair a poster discussion on which patients benefit the most from the new technology, which “might replace CPAP as the ‘gold standard’ for some patients.”

Sleep

treating the disorder

Hypoxia, cancer and other diseases

Many of the sleep presentations at ATS 2012 will focus on the connection between hypoxia and other diseases.

Cancer: Among the latest findings is that sleep-disordered breathing may play a role in cancer mortality. Analyzing 20 years of data from the Wisconsin Sleep Cohort Study, researchers have found that cancer mortality rates were directly related to the severity of the disorder: patients with untreated severe obstructive sleep apnea were nearly four times more likely to die of cancer than those who did not have sleep apnea.

These findings are supported by a murine model of sleep apnea that found that intermittent hypoxia increased tumor growth in lean mice, which will also be presented during ATS 2012.

Metabolic disorders: The results of another large study, The European Sleep Cohort (ESADA) Study—this one enrolling 7,886 patients from throughout Europe—will be presented at the International Conference. In this study researchers found that, after rigorously controlling for obesity and other confounding variables, both OSAS severity and hypoxemia were independent predictors of both diabetes

mellitus and of HbA1c, a “robust predictor” of subsequent cardiovascular mortality in non-diabetic populations.

Heart disease: Two abstracts based on the ongoing German study—Sleep-Disordered Breathing in Patients with Stable Chronic Heart Failure, or SchlaHF—will be presented during the conference. Among other conclusions, the studies have found that heart failure is linked to the severity of sleep-disordered breathing and that age, obesity, severity of heart failure and being male are clinical predictors of SDB.

ESADA and SchlaHF findings are likely to be bolstered during the conference by a National Heart, Lung, and Blood Institute session based on an 11-year follow-up analysis of SDB and cardiovascular risk.

Neurocognitive impairment: The symposium “Hypoxia and Neurocognitive Impairment: Lessons from Sleep Apnea and Ischemic Brain Injury” will highlight the impact of OSAS on neurocognitive function on children and adults. The session will explore the molecular mechanisms of impairment and will discuss functional and imaging techniques that can be employed to assess impairment and advance research in the field. ■

Sleep Sessions at ATS 2012

The following list of sessions may be of particular interest to healthcare professionals in the field of sleep science and health:

- Arrhythmogenesis & Cardiac Disease in SDB: Mechanisms & Clinical Implications
- Models of Sleep Apnea Care Utilizing Portable Monitoring & Alternative Delivery Methods+
- Dyspnea Update & the Road Ahead
- Clinical Year in Review: Sleep
- OSA & Cardiovascular Disease*
- Controversies in the Diagnosis & Management of OSA: Cutting-Edge Debates
- Intermittent Hypoxia-Mediated Cardiovascular &

Neuronal Protective Mechanisms

- No Pain, No Gain: Will Upper-Airway Exercise Training/Electrical Stimulation Work for Sleep Apnea?
- Current & Emerging Treatments for SDB*
- Hypoxia & Neurocognitive Impairment: Lessons from Sleep Apnea & Ischemic Brain Injury
- SDB & Associated Co-Morbidities in Children: From Bench to Bedside*
- Mini Symposium: OSA-Interventions and New Associations
- Mini Symposium: SDB Pathogenesis-Mechanical and Neural Mechanisms

- Mini Symposium: SDB and Metabolic Function—How Unsweet it is.
- Poster Discussion: SDB and Heart Failure—Mechanisms, Consequences and Treatment
- Poster Discussion: Diagnostic and Therapeutic Approaches in Sleep apnea
- Poster Discussion: SDB and CVD—of Rodents and Humans
- Poster Discussion: Upper Airway Control, Structure and Function
- Poster Discussion: Pediatric Sleep Disorders

*Postgraduate course
+Workshop