

## **January 2013 Sleep Journal Club**

**Jilwan FN, Escourrou P, Garcia G, Jaïs X, Humbert M, Roisman G. High occurrence of hypoxemic sleep respiratory disorders in precapillary pulmonary hypertension and mechanisms. CHEST. 2013;143(1):47-55.**

This is an important study that highlights the interaction of pulmonary hypertension (PH) and hypoxemia with complications of sleep disordered breathing. The study intent was to delineate the mechanism of the hypoxemia. There is a well-known association between hypoxemia at night and pulmonary hypertension but the prevalence in studies has been variable. Sleep disordered breathing is also associated with PH but is generally thought to contribute little to the pathogenesis of the PH.

**Methods:** 47 patients were entered into the study with 2/3 of patients having idiopathic PH and 1/3 chronic thromboembolic PH. All the chronic thromboembolic PH patients had undergone thromboendarterectomy or had lesions that were inoperable. Most of the patients were in NYHA class 2 or 3 and were stable on appropriate PH therapy. All patients had the usual evaluations of patients with PH with all receiving overnight attended polysomnograms.

### **Findings:**

Nocturnal hypoxemia was observed in 82.6 % of the patients.

The major reason cited for the hypoxemia was ventilation perfusion mismatch.

Sleep Apnea was found in 89% of the studied group. This included both obstructive and central sleep apnea. Of interest is the finding that 67% had a moderately elevated apnea-hypopnea index (AHI, > 15) with 1/3 having a severely elevated AHI (> 30).

**Discussion:** The authors conclude that sleep related hypoxemia in PH is quite common. Since sleep apnea was so prevalent in this study a home or in lab polysomnography should be considered in most patients with PH.

**Kuna ST, Gurubhagavatula I, Maislin G, Hin S, Hartwig KC, McCloskey S, Hachadoorian R, Hurley S, Gupta R, Staley B, Atwood CW. Noninferiority of functional outcome in ambulatory management of obstructive sleep apnea. Am J Respir Crit Care Med. 2011;183(9):1238-44.**

This VA sponsored study done at several different sleep centers was undertaken several years ago because of the high demand for sleep testing. The research question addressed was: Is diagnostic home testing followed by autotitrating continuous positive airway pressure (CPAP) inferior in terms of compliance and patient satisfaction with testing and CPAP titration done in an attended setting?

**Methods:** Veterans with suspected OSA were randomized to either home testing or standard in-laboratory testing. Home testing consisted of a portable monitor recording followed by at least three nights using an automatically adjusting positive airway apparatus. Participants diagnosed with OSA were treated with CPAP for 3 months. The

authors measured the change in Functional Outcomes of Sleep Questionnaire score and the mean daily hours of objectively measured CPAP adherence

**Measurements and Main Results:** Of the 296 subjects enrolled, 260 (88%) were diagnosed with OSA, and 213 (75%) were initiated on CPAP. Functional outcome score improved both in the home group and in the in-laboratory group but the improvement did not differ. Similarly, daily CPAP adherence was  $3.5 \pm 2.5$  hours/day in the home group and  $2.9 \pm 2.3$  hours/day in the in-laboratory group ( $P = 0.08$ ).

**Conclusions:** Functional outcome and treatment adherence in patients evaluated according to a home testing algorithm is not clinically inferior to that in patients receiving standard in-laboratory polysomnography.

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