

Less costly, more accessible and as effective: Simplified treatment for sleep apnea

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Diagnosing and treating obstructive sleep apnea may soon become much less expensive and arduous, thanks to new research showing that a simplified program using experienced nurses, home ambulatory diagnosis and auto-titrating continuous positive airway pressure (CPAP) machines to titrate CPAP pressures is not inferior to the traditional model which relies on specialist physicians and sleep studies.

The randomized, multi-center study directly compared the results of two OSA diagnosis and treatment protocols, "simplified" and traditional, as well as their respective costs.

The results were published in the second issue for March of the American Thoracic Society's *American Journal of Respiratory and Critical Care Medicine*.

"The main finding of the study was that the simplified model of care was not inferior to the usual physician-led, hospital-based model," said Nick A. Antic, Ph.D., at the Adelaide Institute for Sleep Health in South Australia.

Obstructive sleep apnea, which may affect as many as 20 to 30 million adult Americans and a growing number of people worldwide, is independently linked to cardiovascular problems, hypertension and other co-morbidities, as well as an increased risk of motor vehicle accidents. As obesity continues to be a growing problem in Western and developing countries, the prevalence of OSA is almost certainly rising with it.

The serious complications of OSA, together with its increasing prevalence, make its diagnosis a pressing public health issue. However, traditional diagnosis and treatment of OSA can be expensive and time-consuming. Diagnosis and treatment are also limited by the availability and accessibility of the sleep centers and specialist doctors required. "In Western countries, the waiting lists for sleep medicine service are often very long. In developing countries, there may be no sleep medicine services at all in many areas," said Dr. Antic.

To determine whether diagnosis and subsequent treatment could be simplified without health costs to the patient, Dr. Antic and colleagues developed a nurse-led diagnosis and treatment model that featured ambulatory overnight oximetry and auto-titrating CPAP machines to set fixed CPAP under nurse supervision. They compared the results of patients thus diagnosed and treated to those who underwent standard sleep medicine pathways, including laboratory-based polysomnography, CPAP titration and physician management of the patient.

They assessed the patients' sleepiness on the validated Epworth Sleepiness Scale (ESS) and set the minimal clinically significant change at +/- 2 points. They also assessed other outcomes of sleep, including quality of life measures, executive neurocognitive function on maze tasks and maintenance of wakefulness tests and CPAP adherence. In all, the study assessed almost 200 patients with moderate to severe OSA who were randomly assigned to the simplified or traditional model.

The patients in the nurse-led group spent about 50 minutes longer with the nurse than the patients in the physician-led groups, but were seen by physicians 12 percent of the time. Patients in the physician-led group, meanwhile, had an average of 2.36 consultations with physicians, as opposed to 0.18 for patients in the nurse-led group.

Despite these obvious differences, none of the secondary outcomes

measured showed significant differences between the groups, and differences in ESS scores between groups were lower than the pre-determined minimum for clinical significance.

Notably, the patients in the nurse-led group were diagnosed and treated for \$722 U.S. dollars less per patient than those in the physician-led group, but did not suffer from inferior care or outcomes.

"While we were not surprised at this finding, we were very pleased, as it indicates a robust new avenue for providing better access to sleep services for those with moderate-severe OSA in a timely yet cost effective fashion without sacrificing patient outcomes," said Dr. Antic.

Edward Grandi, Executive Director of the American Sleep Apnea Association welcomes the results of the study saying, "This approach could benefit a significant number of the less complicated apnea cases that are currently untreated due to cost constraints."

"The next step is to test these models in primary care settings," said Dr. Antic. "This project is underway and preliminary data will be presented at the American Thoracic Society's International Conference in May."

Source: American Thoracic Society

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