

Welcome to the regular Podcast of the Journal of Clinical Sleep Medicine. I am Dr. Stuart Quan, Editor of the Journal. These Podcasts are a regular feature of each issue of the Journal and can be downloaded at the Journal's website. Each Podcast features summaries of important articles published in the current issue of the Journal, as well as occasional interviews with authors of these papers.

This issue of the journal features a special article titled, "Clinical Guidelines for the Manual Titration of Positive Airway Pressure In Patients With Obstructive Sleep Apnea." Authors of this paper are Clete Kushida, Alejandro Chediak, Richard Berry, Lee Brown, David Gozol, Conrad Iber, Sairam Parthasarathy, Stuart Quan and James Rowley. The authors represent the positive airway pressure titration taskforce of the American Academy of Sleep Medicine.

Highlights of these guidelines are the following:

1. All potential positive airway pressure titration candidates should receive adequate education, hands-on demonstration, careful mask fitting and acclimatization prior to the titration.
2. Pressures should be increased until the following obstructive respiratory events are eliminated: apneas, hypopneas, respiratory-effort related arousals (RERAs), and snoring; or the recommended maximum level of positive airway pressure is reached.
3. The recommended minimum starting CPAP pressure should be 4 cm of water for pediatric and adult patients and the recommended minimum starting IPAP and EPAP pressures for bi-level therapy should be 8 cm of water and 4 cm of water respectively for both pediatric and adult patients.
4. For patients less than 12 years old, the recommended maximum CPAP pressure is 15 cm of water and for patients on bi-level, the maximum IPAP pressure is 20 cm of water; and for patients greater than or equal to 12 years old, the maximum CPAP pressure is 20 cm of water with a maximum bi-level IPAP pressure of 30 cm of water.
5. The recommended IPAP-EPAP differential is 4 cm of water and the recommended maximum IPAP-EPAP differential is 10 cm of water.
6. CPAP or bi-level pressures should be increased by at least one cm of water with an interval no shorter than 5 minutes with the goal of eliminating the aforementioned obstructive respiratory events.
7. CPAP or both bi-level pressures should be increased if at least one obstructive apnea is observed for those who are less than 12 years old or if at least two obstructive apneas are observed for those greater than 12 years old.
8. CPAP or IPAP should be increased if at least one hypopnea is observed for patients less than 12 years old or at least three hypopneas are observed for those that are greater than 12 years old.
9. CPAP or IPAP should be increased if at least three RERAs are observed for patients less than 12 years old or at least five RERAs are observed for those who are greater than 12 years old.
10. CPAP or IPAP may be increased if at least one minute of loud or unambiguous snoring is observed for those patients less than 12

years old or at least three minutes of loud or unambiguous snoring is heard for those patients greater than 12 years old.

11. The titration algorithm for a split-night CPAP or bi-level titration should be identical to that for a full-night CPAP or bi-level titration.
12. If a patient is uncomfortable or intolerant to high pressures on CPAP, the patient may be tried on bi-level, and if there are continued obstructive events at 15 cm of water CPAP during the titration study, the patient may be switched to bi-level.
13. The pressure of CPAP or bi-level selected should reflect control of the patient's obstructive respiration by a low (preferably less than 5/hour) respiratory-disturbance index (RDI) at the selected pressure, a minimum oxygen saturation above 90% at that pressure and within an acceptable mask leak.
14. An optimal titration reduces the RDI to less than five for at least a 15-minute duration and should include supine REM sleep.
15. A good titration reduces the RDI to less than 10 or by 50% from the baseline if the baseline RDI is less than 15 and also should include supine REM sleep.
16. Inadequate titration does not reduce the RDI to less than 10 but does reduce the RDI by 75% from baseline.
17. An unacceptable titration is one that does not meet one of the above standards.
18. A repeat titration study should be considered if the initial titration does not achieve a grade of optimal or good and if it is a split-night study, it fails to meet American Academy of Sleep Medicine (AASM) criteria.

There is growing recognition that sleep-disordered breathing is first observed in patients who are hospitalized for other reasons. In this issue of the journal, Drs. Kim Goring and Nancy Collop from Johns Hopkins University report the results of a retrospective chart review of 100 polysomnograms and medical records of patients who had polysomnography while hospitalized at Johns Hopkins University Hospital and Bayview Medical Center in Baltimore, MD. They found that this sample had a high prevalence of sleep-disordered breathing, that body-mass index was associated with increasing severity of the degree of sleep-disordered breathing and that women were more likely to have severe disease than men. Finally, sleep-disordered breathing was associated with the presence of decompensated congestive heart failure. The authors suggest that sleep-disordered breathing may be more common in hospitalized patients than previously recognized and that the impact of sleep-disordered breathing on acute exacerbations of those with chronic cardiopulmonary disease requires further investigation.

Sleep laboratories are increasingly located in non-institutional settings. There are many free-standing sleep disorders laboratories that are housed in medical buildings off-site from the hospital or in office complexes. Facilities are frequently more accessible to patients, but may have other potential drawbacks

such as relatively poor access to emergency medical personnel. Some sleep-disorders laboratories are now located in hotel rooms. It is thought by some that the more comfortable surroundings of a hotel room may eliminate or decrease the occurrence of “first night effect” that is a result of sleeping in an unfamiliar environment. In this issue of the journal, Drs. Kimberly Hutchinson, Lily Wang, Beth Mallow and Ms. Yanna Song present data comparing sleep parameters in patients with obstructive sleep apnea studied in a hospital versus a hotel-based sleep center. Interestingly, they found no significant differences between the two facilities in sleep-onset latency, sleep efficiency, REM-sleep latency, total amount of slow-wave sleep, arousal index and total Stage I sleep. These data suggest that at least for obstructive sleep apnea, there is no advantage to studying patients in a hotel-based sleep center as opposed to a standard hospital-based laboratory. It should be noted, however, that CMS is no longer recognizing for payment purposes studies that are performed in a hotel-based sleep center.

The final article summarized in this issue’s Podcast is entitled, “Obesity and Risk of Sleep-Related Upper Airway Obstruction in Caucasian Children”, authored by Mr. Mark Koehler and Drs. Kurt Lushington, Richard Couper, James Martin, Cameron van den Heuvel, Yvonne Pamula and Declan Kennedy from the University of South Australia in Adelaide, Australia. This study was a retrospective case review of 190 children between the ages of four and 12 who had polysomnography at the Adelaide Women’s and Children’s Hospital Sleep Disorders Unit. Children were classified as infrequent snorers, habitual snorers or those with obstructive sleep apnea syndrome. 35% of the children were overweight or obese. The authors did find a relationship between obesity and obstructive sleep apnea. However, this only contributed 4.5% of the explained variance. In their review of the literature, the authors indicate that the role of obesity in obstructive sleep apnea still requires further study and that previously reported data are at times conflicting. Nonetheless, given the increasing importance of obesity in children in the United States, and the emerging literature suggesting adenotonsillectomy not be curative in all cases of obstructive sleep apnea, additional research in this area is required.

This concludes the regular Podcast of the April 15, 2008 issue of the Journal of Clinical Sleep Medicine. The listener is encouraged to read the articles summarized in their entirety, as well as other papers published in this issue of the Journal.

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