



## Editorial

## Do We Need Repeated PSGs to Change Pressure in CPAP Patients?☆

## ¿Necesitamos polisomnografías repetidas para cambiar la presión en los pacientes con CPAP?

Nikolaus C. Netzer<sup>a,b</sup><sup>a</sup> Hermann Buhl Institute for Hypoxia and Sleep Medicine Research, Paracelsus Medical University Salzburg/Austria, Bad Aibling, Germany<sup>b</sup> Department of Internal Medicine, University Hospitals, University of Ulm, Germany

The economic pressure that sleep laboratories are under in the EU, USA and Australia to keep costs down in the diagnosis and treatment of OSAHS (obstructive sleep apnea-hypopnea syndrome) is growing. In the United States, the public health insurance providers Medicare and Medicaid prefer to deal with the study for diagnosis and CPAP (continuous positive airway pressure) adjustment in one single night of polysomnography, or alternatively perform sleep studies in the subjects' homes. In Germany, the public insurance pays one or two nights of PSG (polysomnography with 12 or more channels) either with or without the presence of a specialist for the diagnostic technique or for adjustments, but not for follow-up. Supposedly, this should be done with ambulatory polygraphy, performed by the pulmonologist at a private consultation, if it is ever done.

Given such economic pressure, one begins to wonder if this is the best form of action. It is possible that, in the long run, this type of low-cost sleep medicine winds up being more expensive for the medical system than the classic method based on the use of two or more PSG for the adjustment and follow-up. In this continued debate, there are various pros and cons.

The reasons for a more conservative approach, with an entire night for the adjusting and a third night later for another adjustment and regular follow-ups are the following:

- Many patients with sleep apnea present other underlying sleep disorders that could make controls, adjustments in pressure or additional treatment necessary.<sup>1</sup>
- It is frequent that the problems of the mask and leaks do not appear in just one night for adjustment, and this type of problem is the main reason for low patient compliance.<sup>2</sup>
- The problems of CPAP with restricted nasal respiration frequently appear some days after the first adjustment done in one night divided between the two techniques. This requires an

adjustment in pressure or an ORL intervention and a later pressure adjustment.<sup>3</sup>

- Because of the upper adrenergic level and the phenomenon of hysteresis, together with an increase in the tension of the pharyngeal muscles during the first night of adjustment, it is frequent for pressure levels to be set too low, which should be adjusted after some weeks.<sup>4</sup>
- The persistence of excessive daytime sleepiness after CPAP treatment has begun can be a sign of an important internal organ problem, such as cardiovascular disease or a renal disorder, which had gone previously unnoticed.<sup>5</sup> A control visit in the sleep lab could detect this problem.
- Common sense and 26 years of clinical experience support (to say the least) my impression that regular contact with patients treated with CPAP by means of a follow-up PSG some months after the initiation of treatment, and later with an annual or biannual periodicity, promotes patient compliance. Or perhaps it is vice versa: the patients with good compliance request the exam night because they are either worried about their treatment, want a change of masks or regularly enquire whether there are new treatment options.

On the other hand, the arguments against repeated CPAP adjustments or a control PSG are quite clear:

- Modern auto-CPAP units are so sophisticated that, in a certain pressure mode, small pressure adjustments are done by the device itself, with no clinical need for a new visit.<sup>6</sup>
- The dedication of a certain amount of time to outpatient care by the doctor or his/her team before the CPAP adjustment may be useful for the adjustment of the mask and can help to detect problems with nasal congestion.
- A detailed clinical history of the patient, with a personal interview and a clinical study, as well as a battery of questionnaires, can be useful for detecting underlying diseases without the need for a new PSG and can lead to the correct treatment of sleep disorders or existing internal organ problems.
- Medical equipment suppliers can visit patients and help them with mask problems and other difficulties.

☆ Please cite this article as: Netzer NC. ¿Necesitamos polisomnografías repetidas para cambiar la presión en los pacientes con CPAP? Arch Bronconeumol. 2011;48:1-2.

E-mail address: [nikinetzer@yahoo.com](mailto:nikinetzer@yahoo.com)

- Telephone calls to the sleep laboratory doctor and the lab team, as well as the ambulatory visits by the pulmonologist in the private consultation mean that repeated night-time stays in the sleep laboratory are obsolete.

When the differing positions are evaluated, one would probably reach the conclusion that, currently, the repetition of PSG could in fact be avoided with the right equipment (auto-adjusting CPAP) and with abundant outpatient medical care outside the sleep lab. This would not be a problem if it were not for one thing: who pays for the additional time outside the lab related with it?

While the payment for the treatment of sleep apnea patients or those with other sleep disorders corresponds to a higher level, the physicians in charge of the sleep lab could dedicate additional time to their patients before and after the PSG night. This has changed over time. The treatment of the breathing disorders during sleep is currently considered a routine intervention and the payment is reduced to the minimal level possible in European countries. In Spain, where the majority of the patients are treated through social security and the co-payment system for medical care is in limbo, the situation is no different.

Thus, my response to the question of the title would be the following: we do not need repeated PSG after a CPAP adjustment during two nights in the laboratory (or more nights in complicated patients, like children or seniors) in regular, middle-age patients with auto-CPAP. However, if we need a strategy to serve as a

guideline for constant outpatient care after adjustment either in the laboratory or at home, it should have a payment plan that is viable for both sides, with the aim of non-invasive ventilation becoming a patient's life-long success story.

### Conflict of Interests

The author declares having no conflict of interests, be they economic or of any other type, related with this manuscript.

### References

1. Scharf SM, Tubman A, Smale P. Prevalence of concomitant sleep disorders in patients with obstructive sleep apnea. *Sleep Breath*. 2005;9:50–6.
2. Giles TL, Lasserson TJ, Smith BH, White J, Wright J, Cates CJ. Continuous positive airways pressure for obstructive sleep apnoea in adults. *Cochrane Database Syst Rev*. 2006;3(July):CD001106.
3. Hollandt JH, Mahlerwein M. Nasal breathing and continuous positive airway pressure (CPAP) in patients with obstructive sleep apnea (OSA). *Sleep Breath*. 2003;7:87–94.
4. Netzer NC, Juhász J, Hofmann M, Hohl K, Strohl KP, Küpper TE. The need for pressure changes in CPAP therapy 2–3 months after initial treatment: a prospective trial in 905 patients with sleep-disordered breathing. *Sleep Breath*. 2011;15:107–12.
5. Campos-Rodríguez F, Reina-González A, Reyes-Núñez N, Beiztegui-Sillero A, Almeida-González C, Peña-Griñán N. Clinical and cardiovascular characteristics of patients with obstructive sleep apnoeas without excessive daytime sleepiness. *Arch Bronconeumol*. 2010;46:594–9.
6. Gao W, Jin Y, Wang Y, Sun M, Chen B, Zhou N, et al. Is automatic CPAP titration as effective as manual CPAP titration in OSAHS patients? A meta-analysis. *Sleep Breath*. 2011 [Epub ahead of print].