



## RESEARCH LETTERS

### Survey of Portuguese health care professionals attitudes towards non-invasive ventilation in COPD



To the Editor,

Non-invasive ventilation (NIV) was clearly one of the most relevant developments of Respiratory medicine in the last decades. Acute exacerbations of COPD are among the strongest indications for NIV.<sup>1</sup> For stable COPD, although there are new data pointing to a survival and quality of life benefit,<sup>2</sup> there are still some reservations around this indication.

During the national congress of Pulmonology in November 2015, in an interactive session called "NIV in COPD: why, whom and when", we polled approximately 150 participants. The group consisted of 42% Pulmonology specialists, 14% residents, 8% nurses, 20% clinical physiologists, 1% physiotherapists and 15% doctors from other disciplines. About 40% of the participants had been involved in the previous month in the prescription/titration of more than 4 cases of NIV for chronic respiratory failure (CRF) patients. However 25% had had no practice with NIV for CRF in the previous month.

Concerning pressure levels in stable COPD, only 24% of respondents used pressures above 20 cmH<sub>2</sub>O of IPAP, and the majority (64%) prescribed pressures between 15 and 20 cmH<sub>2</sub>O (Fig. 1).

Importance of procedures performed before prescribing domiciliary NIV for COPD were in 29% a combination of nocturnal SpO<sub>2</sub>, TcCO<sub>2</sub> and sleep studies. Around 20% did not perform any of these.

Initiation and set-up of NIV was done in one third of cases in the outpatient setting in more than one daily session, with 20% performed in the respiratory ward and 19% at home (Fig. 2).

Our findings suggest that a wide group of professionals are interested/involved in the prescription of NIV in Portugal. There is some heterogeneity in the experience of prescribing NIV, with a minority of centres (21%) with more than 10 set-ups per month. Only 26% of prescriptions were initiated during elective admission to hospital (respiratory ward or intermediate care unit), supporting the current trend of outpatient NIV initiation.<sup>3</sup>

Prescriptions for high intensity ventilation are low in Portugal. Nocturnal polygraphy with TcCO<sub>2</sub> monitoring should be considered more highly for evaluation and follow-up of these patients.

Reinforcing education in this area together with creation of referral centres specialized in the prescription and control of NIV is highly recommended.

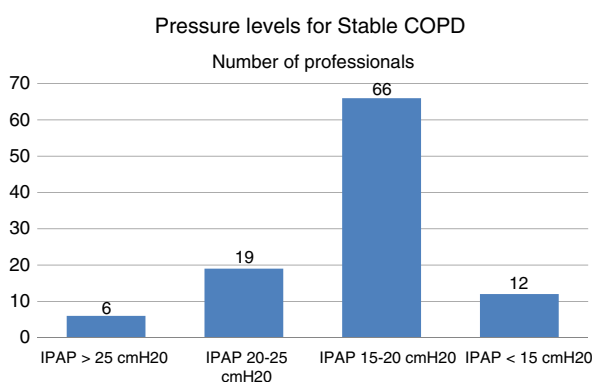


Figure 1 Pressure levels for stable COPD.

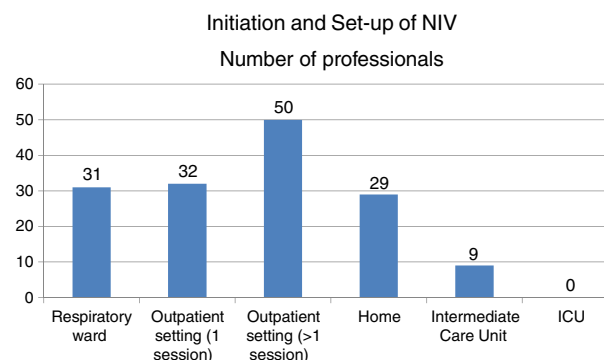


Figure 2 Initiation and set-up of NIV.

## Conflicts of interest

The authors have no conflicts of interest to declare.

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J.C. Winck<sup>a,\*</sup>, J. Chaves Caminha<sup>b</sup>

<sup>a</sup> *Faculdade de Medicina da Universidade do Porto, Portugal*

<sup>b</sup> *Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Portugal*

\* Corresponding author.

E-mail address: [jcwinck@mail.telepac.pt](mailto:jcwinck@mail.telepac.pt) (J.C. Winck).

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## CPAP treatment for catathrenia



Catathrenia is a rare, idiopathic sleep disorder classified as an isolated symptom of sleep-disordered breathing (SDB).<sup>1</sup> Its prevalence is unknown,<sup>2</sup> and its onset is usually in adolescence.<sup>3</sup> Affected individuals are frequently unaware of their problem, and family members or bed partners commonly report strange sounds while breathing during sleep.<sup>1,3</sup>

The hallmark of this disorder is a deep inspiration followed by prolonged expiration and a monotonous vocalization resembling groaning, usually during rapid eye movement sleep.<sup>1</sup>

No pharmacological treatments are available,<sup>4</sup> but some studies have shown partial or complete resolution of events with continuous positive airway pressure (CPAP) therapy, especially in patients with a SDB associated.<sup>2,4,5</sup>

The purpose of this study was to assess the effectiveness of CPAP treatment and a 6-month CPAP therapy in patients with catathrenia without SDB events associated.

We performed a prospective study of patients with catathrenia, diagnosed between 2008 and 2014, who underwent a CPAP titration PSG and subsequently initiated home CPAP therapy for 6 months. There were no exclusion criteria.

During anamnesis, the evaluated symptoms were: groaning, snoring, choking, apnea, daytime sleepiness (Epworth Sleepiness Scale [ESS]), headache, fatigue, and anxiety/depression. The diagnosis was based on an overnight polysomnogram (PSG). A catathrenia event was defined as a deep inhalation followed by prolonged exhalation, and a monotonous vocalization resembling groaning.<sup>1</sup> After the diagnostic study, patients underwent a CPAP titration PSG to correct catathrenia events. CPAP began at 4 cmH<sub>2</sub>O and was progressively increased according to the type of respiratory events observed. In the presence of obstructive events, such as obstructive apnea or hypopnea, the pressure was increased by 2 cmH<sub>2</sub>O every 15 min, and in the presence of snoring, respiratory effort-related arousals, and/or groaning episodes, it was increased by 1 cmH<sub>2</sub>O every 15 min, until the events reduced in number or disappeared. Once the optimal pressure was achieved, CPAP was initiated at

home with the established pressure. The patients were evaluated at 1 and 3 months of CPAP therapy, in the presence of their bed partner. During the evaluation, patients were questioned how they would classify their daytime complaints improvement (scale 0–100). After the first 3 months of CPAP therapy, they were contacted monthly by telephone to evaluate improvements over the remaining 3 months of therapy.

Eight patients were included. Five patients had abnormal sleepiness (ESS > 10). Six patients had symptoms of anxiety disorder and 7 were medicated with psychopharms (Table 1).

Catathrenia events during the diagnostic and CPAP titration polysomnograms are displayed on Table 2. Diagnostic PSG showed a mean respiratory disturbance index (RDI) of 2.8 ± 3.29 events/h, a mean apnea–hypopnea index of 1.2 ± 1.5 events/h. The mean number of catathrenia events was 39.3 ± 26.6. Patient #6 experienced a partial resolution of events, despite an increase in pressure up to 12 cmH<sub>2</sub>O. This patient did not tolerate a higher pressure.

After 1 month of therapy, seven patients had significantly fewer moaning/groaning episodes and patient #6 reported a moderate reduction. After 3 months, seven patients reported complete resolution of nocturnal episodes and patient #6 reported maintenance of the moderate reduction achieved with the first month of therapy. An improvement in daytime complaints was reported by all patients (mean subjective improvement of 80/100). One patient maintained an abnormal sleepiness (ESS > 10). Complete resolution of events was maintained during the 6 months of follow-up, except for patient #6 who continued to exhibit partial improvement. This patient was subsequently treated with clonazepam for 6 months, but showed no additional improvements.

Although CPAP titration has been used in previous studies of catathrenia, its goal was to correct apnea, hypopnea, and flow limitation.<sup>2,5</sup> Other studies have reported an improvement in moaning/groaning with CPAP, but the majority of patients had associated SDB.<sup>2,4</sup>

Iriarte et al.<sup>6</sup> have argued that the pathological mechanism underlying catathrenia is mainly obstructive. Our results support this theory, as our patients responded to