



## Early View

### Correspondence

## **Impact of COVID-19 lockdown on adherence to continuous positive airway pressure (CPAP) by obstructive sleep apnoea patients**

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**TITLE: Impact of COVID-19 lockdown on adherence to continuous positive airway pressure (CPAP) by obstructive sleep apnoea patients.**

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Short Sentence: In a large prospective cohort of sleep apnoea patients treated by CPAP, adherence to CPAP was significantly increased during the COVID-19 lockdown. This was associated with a shift of patients considered as low adherers to average or high adherers.

To the Editor:

The psychological effects of the COVID-19 lockdown and fear of aerosolization made us think that adherence to continuous positive airway pressure (CPAP) treatment might be reduced and consequently the morbidity and mortality of vulnerable obstructive sleep apnoea (OSA) patients increased.

We analysed the impact of the coronavirus disease (COVID-19) national lockdown in France on objective adherence to CPAP assessed by telemonitoring in a cohort of 7485 patients with OSA between 15<sup>th</sup> January 2019 and 15<sup>th</sup> April 2020.<sup>1</sup>

Comparing data from the pre-COVID-19 period (one month before 15 March 2020, the date of the national lockdown announcement) to data post-lockdown, there was a 3.9 % ( $p < 0.001$ ) increase in adherence from a mean value of 386 min per night pre-COVID-19 to 401 min per night during lockdown. These data were confirmed by comparing the CPAP adherence rate during the first month of lockdown (15<sup>th</sup> March 2020 to 15<sup>th</sup> April 2020) to CPAP adherence during the same time-period in 2019, with a 4.48% increase during lockdown ( $p < 0.001$ ). The proportion of very low adherers (less than 10 minutes of CPAP use per night) dropped by 18.5 % ( $p < 0.001$ ) between the similar periods in 2019 and 2020).

These are the first data from a large prospective cohort of patients treated by CPAP, confirming a significant improvement in CPAP adherence during the COVID-19 lockdown. CPAP efficacy is often limited by nonadherence related to a lack of disease-related risk perception.<sup>2</sup> In our case, massive communication about COVID-9, described as a threat to the upper and lower airways, might have motivated patients to be more adherent so as to protect their airways and themselves from the disease, particularly poor adherents. Other hypotheses are that most patients with OSA also have cardiovascular risk factors or comorbidities found to be highly prevalent in coronavirus-infected

patients, particularly in patients admitted to an ICU or having the worst prognosis.<sup>3</sup> Moreover, the fear of being hospitalized could have motivated patients to increase CPAP adherence. Finally, staying continuously at home, reduced air pollution or the absence of occupational stress may also have enhanced CPAP use by increasing sleep duration and favouring naps. While a reduction in CPAP adherence has been widely reported in various settings (e.g. post-traumatic stress disorders, sleep disorders) or in clinical trials, a sudden sharp increase (within a month) as seen in this national cohort, has never been reported.<sup>4</sup> However, the clinical impact of this modest increase in CPAP adherence needs to be confirmed on larger cohort with outcome data.

Our observation suggests that behavioural interventions, based on the patients' perception of both disease-related risk and CPAP-related benefits could improve adherence. Finally, the abundance of data obtained by CPAP tracking systems (particularly adherence) could be used beyond disease management to monitor behaviour and the impact of diseases like COVID-19, so as to rapidly identify new outbreaks and enable prompt intervention to avoid further complications of the disease and its propagation.

Conflict of interest: None, for all authors.

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