



EDITORIAL

Are we missing obstructive sleep apnea diagnosis?



Obstructive sleep apnea (OSA) is characterized by repetitive episodes of upper airway collapse during sleep. During the episodes of upper airway obstruction the patient generates large negative intrathoracic swings that are typically terminated by an arousal from sleep, causing cyclic episodes of hypoxia and re-oxygenation.¹ When not recognized and treated, OSA may cause multiple consequences, including not only loud snoring and disrupted sleep, but also excessive daytime sleepiness, tiredness, symptoms of depression, low quality of life and increased risk of metabolic and cardiovascular disease.² Despite the florid presentation, doctors and patients frequently have a low perception of the disease.³ When the dramatic episodes of suffocation are occurring, the patient is sleeping and the doctor is not there to witness. Moreover, the day time symptoms associated with OSA are frequently overlooked, misinterpreted, under recognized or simply inexistent. This may help to explain why OSA was only recognized as a common public health problem over the last 30 years with the widespread use of polysomnography. The prevalence of OSA in the general population is still a matter of debate. Two large epidemiological studies in Brazil and Switzerland as well as the follow up of the Wisconsin cohort showed that 20–50% of the adult population has some degree of OSA, depending on the diagnostic criteria.^{4–6} The reasons for a prevalence that is much higher than estimated prevalence of OSA syndrome over 20 years ago (4% and 2% in men and women, respectively)⁷ includes the obesity epidemics, the incorporation of new technologies to detect hypopneas (nasal cannula) and the recognitions that a large proportion of individuals with altered sleep studies, as determined by an elevated number of apneas plus hypopneas during sleep, do not complain of typical symptoms such as excessive daytime sleepiness. In this issue of the Portuguese Journal of Pulmonology, Rodrigues and collaborators⁸ investigated the prevalence of OSA diagnosis among 29 general practitioners in Portugal that comprised an adult population under observation of 34,909 individuals. The estimated prevalence of OSA diagnosis was 0.89%, and therefore one order of magnitude lower than what was recently estimated in the general population. The proportion of OSA diagnosis rose in conjunction with the typical OSA risk factors, such as males (1.47%) and in those aged between 65 and 74 (2.35%), but still

OSA diagnosis was much lower than it would be predicted considering the above mentioned epidemiological studies. Interesting enough, in contrast to epidemiological studies, the majority of the diagnosed patients had severe OSA. The low awareness of OSA is a world wide problem that may be even more dramatic among high risk populations. For instance, Costa et al. evaluated 500 consecutive patients from a tertiary cardiology hospital and found that 3.1% had a previous despite a estimated prevalence of OSA (performed by questionnaires and further validated by portable monitoring in a sub sample) that varied from 50 to 80%.⁹ Taken the messages from the Rodrigues et al. study and previous observations,^{3,8} we must continue our efforts to approach potential reasons for the OSA under diagnosis that includes no formal training in sleep medicine, low pro active questions addressing sleep issues in the office, low access to sleep studies. We must increase the awareness of OSA among doctors in order to ultimately will benefit more patients.

References

1. Dempsey JA, Veasey SC, Morgan BJ, O'Donnell CP. Pathophysiology of sleep apnea. *Physiol Rev.* 2010;90:47–112. Erratum in: *Physiol Rev.* 2010;90(2):797–8.
2. Drager LF, Togeiro SM, Polotsky VY, Lorenzi-Filho G. Obstructive sleep apnea: a cardiometabolic risk in obesity and the metabolic syndrome. *J Am Coll Cardiol.* 2013;62:569–76.
3. Kapur V, Strohl KP, Redline S, Iber C, O'Connor G, Nieto J. Underdiagnosis of sleep apnea syndrome in U.S. communities. *Sleep Breath.* 2002;6:49–54.
4. Tufik S, Santos-Silva R, Taddei JA, Bittencourt LRA. Obstructive sleep apnea syndrome in the Sao Paulo Epidemiologic Sleep Study. *Sleep Med.* 2010;11:441–6.
5. Heinzer R, Vat S, Marques-Vidal P, Marti-Soler H, Andries D, Tobback N, et al. Prevalence of sleep-disordered breathing in the general population: the HypnoLaus study. *Lancet Respir Med.* 2015;3:310–8.
6. Peppard PE, Young T, Barnet JH, Palta M, Hagen EW, Hla KM. Increased prevalence of sleep-disordered breathing in adults. *Am J Epidemiol.* 2013;177:1006–14.
7. Young T, Palta M, Dempsey J, Skatrud J, Weber SBS. The occurrence of sleep-disordered breathing among middle-aged adults. *N Engl J Med.* 1993;328:1230–5.

8. Rodrigues AP, Pinto P, Nunes B, Bárbara C. Obstructive Sleep Apnea: epidemiology and Portuguese patients profile. *Rev Port Pneumol.* 2017;23:57–61.
9. Costa LE, Uchôa CH, Harmon RR, Bortolotto LA, Lorenzi-Filho G, Drager LF. Potential underdiagnosis of obstructive sleep apnoea in the cardiology outpatient setting. *Heart.* 2015;101:1288–92.

G. Lorenzi-Filho^{a,*}, P.R. Genta^a, L.F. Drager^{a,b}
^a *Sleep Laboratory, Pulmonary Division, Instituto do Coração, Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil*

^b *Hypertension Unit, Instituto do Coração, Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil*

* Corresponding author.
E-mail address: geraldlo.lorenzi@gmail.com
(G. Lorenzi-Filho).

Available online 15 February 2017