

Sleepiness and sleep apnea: a disastrous partnership

Sonolência e apnéia do sono: uma parceria desastrosa

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Based on current knowledge, sleep-disordered breathing should be considered to consist of a broad spectrum of pathophysiological events, with systemic clinical repercussions, that have long been grouped under the single heading of sleep apnea syndrome. More recent evidence indicates that there is an evolution that tends to be progressive—from primary snoring to the classic presentation of obstructive sleep apnea-hypopnea syndrome (OSAHS).^(1,2) This evolution presents distinct stages of the same pathophysiological process rather than one specific disease or a single syndrome. Therefore, for example, in an intermediate band of this spectrum, we can identify snoring, with excessive daytime sleepiness, without apnea or hypopnea but with frequent awakenings, preceded by an increasing number of episodes of negative intrathoracic pressure, a condition known as upper airway resistance syndrome.⁽³⁾ Over time, these features can become intermingled or even superimposed, depending on “trigger” circumstances such as weight gain, as well as the use of alcohol, sedatives, hypnotics, etc. According to the World Health Organization, obesity is now a global epidemic, attributable to sedentary lifestyles and greater consumption of foods rich in animal fat, a problem that is compounded by the recent increase in the availability of such foodstuffs to low-income populations. Data from the Family Budget Study, conducted by the Brazilian Institute of Geography and Statistics, reflect this global trend. Data collected in the 2003–2004 period show that, of the 95.5 million Brazilians over the age of 20, 38.8 million (40.6%) were overweight, and 10.5 million (8.9% of the men and 13.1% of the women) were classified as obese. Therefore, Brazil is also undergoing a fattening process, which, in the most recent analysis, has already effected changes in the morbidity and mortality profiles of our population. Not without reason, clinical and epidemiological studies have demonstrated a strong association between obesity and OSAHS, the prevalence of which ranges from 40 to 90%.^(4,5) In the article entitled “Obstructive sleep apnea-hypopnea syndrome: association with gender, obesity and sleepiness-related factors”, conducted by Knorst et al. and published in this issue of the Brazilian journal of Pulmonology,⁽⁶⁾ we see a faithful portrait of that which figures into the reality of our clinical practice in this, the fascinating field of pulmonology. The authors of this original article, by conducting

a cross-sectional study of 300 patients with OSAHS, re-affirmed the repercussions of its morbid relationship with obesity, highlighting body mass index (BMI) as the clinical parameter that has the greatest impact on the severity of OSAHS. In a previous study of 1,595 patients evaluated at a sleep laboratory in Salvador, Brazil, we obtained similar results.⁽⁷⁾ Regardless of the BMI, the distribution of body fat, central obesity in particular, is the relevant factor to consider under these circumstances, with special emphasis on waist/hip ratio and neck circumference—the latter being considered the best predictor of OSAHS.⁽²⁾ A recent study involving magnetic resonance imaging of the upper airways to evaluate obese individuals with and without OSAHS showed that, in isolation, greater deposition of fat at this anatomical level is not a determining factor for the development of OSAHS.⁽⁸⁾ Of special note is the fact that the excessive daytime sleepiness caused by OSAHS is correlated with traffic accidents, as is well documented in the Knorst et al. study appearing in this issue. We pulmonologists are increasingly called upon to manage quality-of-life issues, whether through monitoring environmental pollution, attempting to improve aerobic performance, encouraging smoking cessation, or promoting workplace sanitation, and, by extension, reducing the damage and insults that such factors cause in the lives of our patients. Within this context, the identification and appropriate treatment of individuals suffering from OSAHS will undoubtedly lead to a reduction in the number of traffic accidents, a statistic in which Brazil, sadly, is one of the world champions. Knorst et al., in what I consider the greatest contribution of their study, reported that 238 (79.3%) of the 300 patients studied drove cars on a regular basis, and that 106 (44.5%) of those patients admitted to having dozed off while driving. As would be expected, those patients presented high scores on the sleepiness scale. Classically, individuals with OSAHS have two cardinal complaints: snoring and excessive daytime sleepiness.^(9,10) The mere presence of OSAHS results in an up to six-fold increase in the risk of having a traffic accident due to falling asleep at the wheel.^(11,12) The Brazilian National Transportation Council recently adopted a strategy long employed in other countries, recommending polysomnography for individuals clinically suspected of having OSAHS, as determined by physicians performing the

obligatory medical examinations required in order to obtain professional-class driver's licenses (for bus drivers, van drivers, and truck drivers). Certain intrastate and interstate transport companies operating in Brazil have already made such testing part of the routine evaluation of their drivers, with positive results—substantially reducing the number of highway disasters and avoiding those “inexplicable” accidents in which the vehicle flies off a precipice without so much as a skid mark on the asphalt, and the motorist (assuming that the motorist survives) admits to having been “tired”. The other day on a highway in Bahia, I saw a truck sporting a bumper sticker that read “It's better to be happy than to be right”. Despite this philosophical postulation worthy of Plato, I know that not all that is fair in love is fair in science, and therefore, in our work, we must be right to be happy. There are still those who consider reason to be the enemy of imagination. However, it does not require a great deal of imagination to picture plump, apneic motorists drowsily roaming the highways of Brazil.

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References

1. Engleman HM, Douglas NJ. Sleep. 4: Sleepiness, cognitive function and quality of life in obstructive sleep apnoea/hypopnoea syndrome. *Thorax*. 2004;59(7):618-22.
2. Davies RJ, Ali NJ, Stradling JR. Neck circumference and other clinical features in the diagnosis of the obstructive sleep apnoea syndrome. *Thorax*. 1992;47(2):101.
3. Guilleminault C, Stoohs R, Clerk A, Cetel M, Maistros P. A cause of excessive daytime sleepiness. The upper airway resistance syndrome. *Chest*. 1993;104(3):781-7.
4. Wittels EH, Thompson S. Obstructive sleep apnea and obesity. *Otolaryngol Clin North Am*. 1990;23(4):751-60.
5. Johns MW. Daytime sleepiness, snoring, and obstructive sleep apnea: the Epworth sleepiness scale. *Chest*. 1993;103(1):30-6.
6. Knorst MM, Souza FJ, Martinez D. Obstructive sleep apnea-hypopnea syndrome: association with gender, obesity and sleepiness-related factors. *J Bras Pneumol*. 2008;34(7):490-6.
7. Daltro CH, Fontes FH, Santos-Jesus R, Gregório PB, Araújo LM. Síndrome da apnéia e hipopnéia obstrutiva do sono: associação com obesidade, gênero e idade. *Arq Bras Endocrinol Metab*. 2006;50(1):74-81.
8. Hora F, Napolis LM, Daltro C, Kodaira SK, Tufik S, Togeiro SM, et al. Clinical, anthropometric and upper airway anatomic characteristics of obese patients with obstructive sleep apnea syndrome. *Respiration*. 2007;74(5):517-24. Epub 2006 Dec 5.
9. Young T, Palta M, Dempsey J, Skatrud J, Weber S, Badr S. The occurrence of sleep-disordered breathing among middle-aged adults. *N Engl J Med*. 1993;328(17):1230-5.
10. Stradling JR, Crosby JH. Predictors and prevalence of obstructive sleep apnoea and snoring in 1001 middle-aged men. *Thorax*. 1991;46(2):85-90.
11. Masa JF, Rubio M, Findley LJ. Habitually sleepy drivers have a high frequency of automobile crashes associated with respiratory disorders during sleep. *Am J Respir Crit Care Med*. 2000;162(4 Pt 1):1407-12.