Editorial

Obstructive sleep apnea: a contagious disease?

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Can we say that a disease is contagious if patients who die from it, in the act of dying, cause the deaths of others? In Wisconsin (USA), a group of 602 civil servants, ranging from 30 to 60 years of age, were evaluated. Among those, 24% of the males and 9% of the females were diagnosed with sleep-disordered breathing, defined as five or more attacks of apnea or hypopnea per hour of sleep. In a subgroup of that sample, 4% of the males and 2% of the females presented sleep-disordered breathing together with the main symptom of sleep disturbance (excessive daytime sleepiness), which provided the elements for the diagnosis of obstructive sleep apnea-hypopnea syndrome (OSAHS).[1] The prevalence of OSAHS increases with age.[2] Although it is known that patients diagnosed with OSAHS are from two[3] to eight times[4] more likely to become involved in traffic accidents, the effect that sleepiness-related accidents have on the mortality of patients with OSAHS and of the population in general still cannot be directly measured. Data from the Ministry of Health reveal that traffic accidents are a male phenomenon. Of all licensed drivers in Brazil, 73% are male; among all victims of traffic fatalities, 82% are male. Coincidentally, OSAHS is also a male phenomenon. Such a coincidence may further the understanding of and search for a solution to this problem.

Every year, 30,000 people die on the streets and roads of Brazil. Accidents caused by falling asleep at the wheel can only be correctly identified if the drivers involved admit the fact.[5] Dozing off for less than two minutes can go unnoticed.[6] After having had an accident, a driver might deny having fallen asleep due to inability to identify such microsleep episodes or due to fear of reporting having fallen asleep to the authorities. The suspicion that a driver has fallen asleep is strengthened if the vehicle went off the road or collided with another vehicle without leaving any brake marks on the pavement. Authorities in Kentucky (USA) have identified falling asleep or fatigue as the cause of 13% of all fatal truck collisions and 4% of all nonfatal truck collisions.[7] During a three- to four-second microsleep episode, a vehicle can travel a distance greater than the length of a football field. Not every nap results in an accident. Microsleep episodes tend to occur in monotonous parts of roads with little traffic and, therefore, with low probability of collision. Electroencephalographic studies carried out in Sweden revealed that some train conductors[8] and truck drivers[9] working the night shift experienced microsleep episodes during which they presented alpha and theta waves, as well as slow eye movements, all of which are characteristic of stage 1 sleep. The authors found that, during a single shift, these episodes, cumulatively, could last up to a full hour. During these lapses, train conductors failed to obey the signals. However, no accidents happened during the study. When an accident happens, highway patrol officers report microsleep episodes as a lack of attention, which is therefore listed as the most common cause of accidents.

Alertness is not an all-or-nothing phenomenon. There is a continuum between total alertness and sleep, which can be estimated by the sum of alpha and theta waves in the electroencephalogram. The spectral analysis of electroencephalograms reveals that, after driving for 20 to 30 minutes, drivers cross the threshold above which the quantity of alpha and theta waves already indicate sleepiness. In order to fight sleepiness, various drivers make use of cold air on their faces or turn on the radio.[10] Although these strategies create a subjective sensation of higher alertness, they cannot improve the electroencephalographic frequency. In contrast, napping (even for less than 15 minutes) and consuming caffeine both partially revert sleepiness.[11]

Going to bed at a reasonable hour and taking siestas are problematic for everyone. However, the risk of having a traffic accident increases in individuals who suffer from sleep-disordered breathing.[12-13] In a study conducted in Spain, it was reported that the risk of accidents was seven to eleven times greater for individuals who suffer from OSAHS than for controls. Reinforcing the concept that the risk of ingesting alcohol is higher when accompanied by sleep-disordered breathing, the authors found that individuals who reported alcohol ingestion on the day of the accident and presented more than ten apnea-hypopnea attacks per sleep hour in the polysomnography were eleven times more likely to have an accident than were those who had ingested alcohol on the day of the accident but had less than ten apnea-hypopnea attacks per sleep hour.[14] Alcohol retards reflexes but does not eliminate them, as sleep does.

Authorities responsible for preventing traffic accidents have emphasized their concerns about speeding and alcohol consumption. However, the available data clearly demonstrate that leaving sleepiness out of the equation is a mistake.[15] Accidents in which drivers fall asleep at the wheel tend to occur at high speeds.[16] According to reports from patients experiencing episodes of sleepiness,

they drive faster in order to reduce sleepiness by "getting an adrenalin rush".

The study published in this issue of the Journal ("Prevalence of risk factors for obstructive sleep apnea syndrome in interstate bus drivers")[17] shows the potential influence that the field of Pulmonology can have on this important topic. The choice of bus drivers was most opportune. A PubMed search returns forty-two studies on sleepiness and truck drivers. However, there are only eleven studies on sleepiness and bus drivers, and only one of those was conducted in Brazil.[18] Focusing on bus drivers is appropriate since, for many in Brazil, this is the only means of transportation, and the potential for 'contagion' is therefore higher. Data in the literature indicate that 61% of bus drivers suffer from sleep-disordered breathing, presenting five or more apnea-hypopnea attacks per hour of sleep.[18] Brazil has a national culture of self-medication. Therefore, in addition to focusing on high-risk groups such as professional drivers, future studies should evaluate the influence of sedatives, analgesics and antihistamines on the risk of accidents in our country. Data in the literature show that the use of these over-the-counter drugs can double and even triple the accident rate.[18]

Even in the USA, OSAHS is still underdiagnosed among workers with health care plans that provide full coverage.[19] This situation should be reversed, since treating OSAHS would reduce the risk of accidents[20-21] Managing patients with OSAHS also has the potential to reduce the billions of dollars in material damages and to avoid untimely deaths.[22]

Pulmonologists, maintaining their tradition of combating dreaded diseases, such as tuberculosis, as well as those that are insidious, such as smoking, should be challenged to transform OSAHS from a still unknown disease into a treatable cause of morbidity and mortality for patients and bystanders. After all, the best part of the trip is coming home alive.

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