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Demand for Multicentric Climatic Research to Investigate the Relationship Between Sleep Apnea and Other Disorders and Seasonality

To the Editor:

The merit of the work by Cassol and colleagues (see page 1499) is outstanding. The study performed a retrospective clinical analysis of an impressive 7,523 individuals suspected of having some type of sleep disorder over the span of 10 years. The authors aimed to examine whether a relationship between seasonality and the severity of obstructive sleep apnea (OSA) exists. Through elaborate statistical analysis, results showed an increase in the incidence of more-severe OSA in the winter compared with that in the summer. However, the authors acknowledge that the retrospective nature of the study limits the ability of the main question to be adequately addressed.

This study has great potential impact, and the authors deserve congratulations for the complexity of the research. However, it should be noted that it was performed in only one location (Porto Alegre, Brazil), and the results do not accurately represent a global climatic characteristic. An important point that defines a subtropical climate, as that of the study’s location, is the presence of four clearly defined seasons that vary greatly in temperature range. Such a wide variation of temperatures does not occur at all latitudes. As a result, a well-defined winter has a greater impact on the health of the population, causing more individuals to seek medical assistance and consequently leading to a larger number of breathing disorders. OSA has a high prevalence, reaching about 33% of a metropolitan city and demonstrating the relevance of studying relationships branching from this common disease in the contemporary world.

Another prominent factor was the high prevalence of smokers found in this sample. Conway et al. also reported a similar prevalence of collectively about 37%, suggesting a strong association between sleep fragmentation and oxyhemoglobin desaturation during sleep. Thus, smoking habits, a predictive factor for breathing disorders, can be linked to an increase in the apnea-hypopnea index used to indicate sleep apnea.

The question posed in this study of whether OSA is a winter disease also raises another important question: the existence of seasonality in other types of sleep disorders. To investigate this possibility, future research is needed to elucidate this association, using the current study as a preliminary base. Seasonality in relation to sleep disorders is an innovative topic and should be investigated as a multicentric framework in regions with distinct climates to evaluate the changes in several sleep disturbances, including insomnia, movement disturbances, and sleep apnea, relative to seasonal variations.

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Response

To the Editor:

We thank Mr Ramos-Xavier and colleagues for their comments and knowledgeable appraisal of our work. Their disposition to engage in multicentric studies demonstrates their awareness of the relevance of the matter.

Our report on the seasonality of obstructive sleep apnea severity was performed in a humid subtropical climate, the Cfa group in the Köppen-Geiger climate classification (the Cfa group is an environment with significant precipitation in all seasons) and an average temperature of the warmest month above 22°C and an average temperature of the warmest month above 22°C belonging to the temperate group of the Köppen-Geiger
climate classification). Although only a small portion of the surface of the globe is subjected to this weather, many cities with productive sleep research centers share this climate (eg, Boston, Massachusetts; New York, New York; Philadelphia, Pennsylvania; Milan, Italy; São Paulo, Brazil; Hong Kong, China). It is possible to attempt to replicate the data in the same climate or to do a worldwide study.

It is feasible to undertake an initiative to analyze global polysomnographic data. Sleep laboratories from any part of the planet can send the polysomnography reports to us in databases containing full meteorologic data or at least daily relative air humidity. The mathematicians at our university are capable of extending the cosinor analyses to larger databases.

One opportunity to test immediately the seasonality of polysomnographic records may emerge from data Ramos-Xavier and colleagues already have. The epidemiologic study published in 2010 by Tufik and colleagues probably allows answering one doubt from our study. Patients with the most severe cases of sleep apnea may seek the sleep laboratory in the winter not exclusively because winter-related upper airway conditions such as colds or allergies might have worsened their apnea symptoms but simply because it is more convenient for them to take the time to seek treatment in the winter. The population-based sample from São Paulo was recruited using a probabilistic three-stage cluster sampling technique. Therefore, if the volunteers in the Tufik and colleagues’ study undergoing polysomnography randomly over the year have apnea-hypopnea indexes that fit a cosinor model, stronger evidence will be attained of the climatic influences on sleep apnea.

Besides seasonality of obstructive sleep apnea severity, we observed seasonal variation of some polysomnographic measurements that may be worth analyzing in larger samples. For instance, cardiac arrhythmias on polysomnography also have an acrophase in the winter months. We have focused on sleep apnea severity, but many other aspects related to the seasonality of sleep disorders deserve investigation.

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Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration of Thyroid Nodules

Pushing the Boundary Too Far?

To the Editor:

Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) helps bronchoscopists attain cytologic specimens from sites beyond the airway with accuracy, ease, and safety. Research has flourished, and publications have included reports of biopsying not only lymph nodes for lung cancer staging, but also lung and mediastinal masses, TB-infected lymph nodes, cysts, and thyroid nodules.1-5

The potential for complication from thyroid nodule biopsy via EBUS-TBNA is highlighted in the following case. A 49-year-old woman was referred for EBUS-TBNA of asymptomatic mediastinal adenopathy with a history of low-grade endometrial sarcoma resected through hysterectomy 3 months prior. At the time of surgery, small-volume mediastinal adenopathy and lung nodules were identified. On follow-up CT imaging, adenopathy had increased in size. A thyroid nodule was also identified (Fig 1A). Thus, the patient underwent airway inspection (normal) and EBUS-TBNA. Sampling of a 9-mm subcarinal lymph node identified noncaseating granuloma consistent with sarcoid-like lymphadenopathy on two passes, and follow-up CT imaging 3 months later identified stable disease. The thyroid nodule was also sampled through EBUS-TBNA, and cytologic analysis identified colloid consistent with a benign nodule. The patient presented to the ED 8 days later with fever and swelling and pain in her neck. Ultrasonography of her neck identified a thyroid abscess, which was drained (Fig 1B). She was treated with IV antibiotics, and repeat ultrasound-guided drainage was required 48 h later. Thyroid aspirate cultures grew Streptococcus mitis and mixed gram-positive and gram-negative organisms sensitive to penicillin. Mycobacterial staining and cultures of the abscess and mediastinal lymph node were negative. She was discharged without recurrence of symptoms, and follow-up thyroid function testing was normal.

The standard modality of sampling thyroid nodules is through ultrasound-guided fine-needle aspiration (US-FNA) with a low complication rate.6 US-FNA is aseptic; however, it is not possible to maintain the sterility of an EBUS-TBNA needle through the human mouth and oropharynx. Thyroid nodules visible by endobronchial ultrasound are present close to the proximal trachea below the vocal cords, an area prone to contamination of the oropharynx. Infectious complications postulated to be secondary to oropharyngeal contamination have been described previously.7 Until randomized comparisons of EBUS-TBNA with standard and safe procedures such as US-FNA of the thyroid are carried out, bronchoscopists should proceed with caution in expanding the use of EBUS-TBNA, especially in the proximal airway prone to oropharyngeal contamination. Retrosternal thyroid nodules beyond the reach of US-FNA are an ideal cohort for further investigation.5