in the implementation of both preventive measures and inspections.

Due to the seriousness of the situation in Andalusia (between 2007 and 2015, 126 cases of occupational disease due to silicosis in workers exposed to AQA were reported), a comprehensive pioneer program for this new form of silicosis was proposed in 2017, that is still pending evaluation.[5]

Although the economic crisis resulted in a decline in the construction sector and consequently in the manufacture and installation of AQA worktops, a resurgence of this economic activity has been observed, so surveillance and monitoring of this emergent form of silicosis must be stepped up, in order to ensure safe and healthy workplaces and to protect workers and their families after diagnosis.

Conflicts of interest

The authors declare no conflicts of interest.

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Data Collection and Microbiological Monitoring in Global Tuberculosis Intervention☆

Recogida de datos y control microbiológico para la intervención global de la tuberculosis

To the Editor,

We read with interest the article published by Caylà and Caminero,[1] and in line with their proposal to update and implement a national program for the control of tuberculosis (TB) for Spain, we would like to contribute to this effort from Castile-Leon and emphasize the importance of epidemiological surveillance, microbiological control, and diagnosis and treatment of this disease.

TB generates a high burden of morbidity and mortality worldwide, and it is estimated that 1.7 billion (23%) of the world's population is infected with *Mycobacterium tuberculosis*.[2] The distribution of the disease burden varies significantly depending on the region, and it was estimated that in 2017, 44% of cases occurred in the World Health Organization (WHO) South-East Asia region, 25% in Africa, 18% in the Western Pacific region, and 7.7% in the Eastern Mediterranean region. Incidence is lower in the Americas (2.8%) and Europe (2.7%).[3]

In total, 1419 new cases of TB were reported to the Epidemiological Surveillance Network of Castile-Leon in the 5-year period between 2012 and 2016.[4] Incidence rates have remained steady, ranging from 10.5 new cases per 100 000 inhabitants reported in 2012 to 10.1 TB cases per 100 000 inhabitants in 2016. The incidence of confirmed cases shows a declining trend, from 11.7 cases per 100 000 inhabitants in 2012 to 8.6 cases per 100 000 in the year 2016. Median age in men is 58 years and 48 years in women, with a male/female ratio ranging between 1.54 in 2014 and 1.94 in 2016.

Etiology from bacteriological diagnosis identifies *Mycobacterium tuberculosis* as the most frequently isolated microorganism, detected in 71% of cases. Antibiotic sensitivity testing of the series found 83 resistance patterns, of which 32 (39%) involve pyrazinamide resistance and 21 (25%) isoniazid resistance. Analysis of the follow-up results shows that in 2015, 67% had received satisfactory treatment, defined as cure and completed treatment.[4]

The increasing prevalence of resistance in Castile-Leon since the beginning of this decade (1.2% to streptomycin; 3.2% to isoniazid; 0.3% to rifampicin; 0.1% to ethambutol; and 0.5% to pyrazinamide)[5] underlines the need for maintaining active surveillance and performing sensitivity studies, particularly when in Europe it is estimated that 17% (95% CI: 16%–18%) are new cases and 53% (95% CI: 46%–61%) of previously treated cases have methicillin-resistant and/or multidrug-resistant TB.[3]

Our view, reflected by other authors,[6] is that the rational and sequential use of antituberculous drugs is of utmost importance when designing TB treatment, be it sensitive or resistant.

Follow-up indicators and compliance with the criteria of the Plan for the Prevention and Control of Tuberculosis, agreed by the autonomous communities and approved by the Public Health Commission in June 2013, have improved in the years under study. However, it is essential that registries also improve, including the recording of appropriate microbiological data, if we are to achieve the proposed objectives and accelerate progress toward the global goals and milestones set down by the WHO for reducing the burden of TB disease, scheduled for 2020, 2025, 2030 and 2035.[3]

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Sleep-Disordered Breathing: Looking Beyond the Apnea/Hypopnea Index☆

Trastornos respiratorios del sueño: más allá del índice apneas e hipopneas

To the Editor,

The relationship between sleep-disordered breathing and cardiovascular disease has now been clearly identified.[1] Part of the cardiovascular impact is attributable to chronic intermittent hypoxia[2] generating oxygen free radicals which trigger the inflammatory cascade by promoting a state of systemic inflammation that leads to widespread endothelial damage, thus predisposing toward atherosclerosis.

The severity of these disorders is evaluated using the apnea–hypopnea index (AHI), defined by the number of apnea and hypopnea events per hour of sleep using polysomnography as a diagnostic method, and per hour of recording, if respiratory polygraphy is used. Apneas are defined by a reduction in airflow of at least 90% with a duration of at least 10 s. Hypopnea occurs when airflow is reduced by at least 30% for at least 10 s, in association with arterial oxygen desaturation of 3% or more.[3] This raises the first question: is the pathophysiological impact of both parameters the same? Do they represent the same thing? Is it acceptable to combine them in the same index?

In a cohort of 963 patients with stable heart failure, 58% had moderate to severe apnea, and mortality during a follow-up of 7.3 years was 50%. The percentage of time during sleep with an oxygen saturation below 90% (T90) was significantly associated with mortality, which increased by 16% for every hour that the patient showed a saturation of less than 90%. This relationship was not observed with the AHI.[4] Obviously, the presence of apnea and hypopnea define the presence of the disease, but is this ratio useful for stratifying their severity? Is it an appropriate representation of the pathophysiological mechanisms that potentially contribute to the increased risk of cardiovascular disease in these patients? Probably not, since a higher degree of hypoxemia will surely have greater negative effects; but the AHI ignores this, and does not reflect either the depth or the duration of desaturations and therefore would classify patients with different T90 values, desaturations or comorbidities but with the same AHI in the same severity group.

It was recently reported that the severity of obstructive sleep apnea, quantified by the hypoxic burden associated with the respiratory event, was independently associated with cardiovascular mortality. In contrast, there was no association between this and AHI when it was evaluated as an independent predictor.[5]

Excessive daytime sleepiness, on the other hand, is a symptom that indicates the clinical severity of obstructive sleep apnea. However, patients may have worse oxygenation indices and longer apneas than those without this symptom, despite having a similar AHI.[6]

This evidence suggests that when stratifying disease severity, we must set aside our one-dimensional vision that only considers AHI, and instead take into account other parameters that reflect the overall status of the patient, and include those that reflect the hypoxemic burden of the disease, which is ultimately responsible for cardiovascular morbidity and mortality. It would be interesting to combine efforts to develop a similar tool to the BODE index in COPD that would provide an overall assessment of patients with sleep disordered breathing.

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