



Editorial

Work-Related Asthma: The Dawn of Knowledge? ☆



Asma relacionada con el trabajo: ¿en los albores del conocimiento?

 María Jesús Cruz,^{a,b,*} Xavier Muñoz^{a,b,c}
^a Servicio de Neumología, Hospital Universitario Vall d'Hebron, Barcelona, Spain

^b CIBER Enfermedades Respiratorias (CIBERES), Barcelona, Spain

^c Departament de Medicina, Universitat Autònoma de Barcelona, Barcelona, Spain

Asthma is a potentially serious disease that is growing in prevalence in most developed countries.¹ One of the factors that might have prompted this trend is the greater number of cases of asthma that develop in adults.² In addition to a possible allergic origin, as occurs in childhood asthma, epidemiological studies indicate that occupational exposure may be the cause of up to 25% of all cases of adult-onset asthma.³ Asthma caused by exposure to a specific substance in the workplace is known as occupational asthma (OA), while pre-existing or concomitant asthma which is intensified by stimuli present in the workplace is known as work-exacerbated asthma (WEA). OA can be further subclassified as immunological and non-immunological, depending on the mechanisms causing the disease.² Immunological OA requires time for sensitization to the causative agent to develop, while non-immunological OA refers to patients whose asthma is caused by irritants, the most obvious example of which is reactive airway dysfunction syndrome or RADS.⁴ RADS is caused by a single or multiple exposure to high doses of an irritant. In general, there is no latency period, since symptoms appear within 24 h after exposure. The term “work-related asthma” (WRA) has been around for many years, but interest in this entity has been growing in the last decade. This term includes both OA and WEA.

Although it has been estimated that OA is the most prevalent chronic occupational disease in many countries, and that WEA may account for 21% of cases of asthma among the working population,^{5,6} the diagnosis, prognosis and treatment of this disease are complex and controversial.⁷ For a correct diagnosis, a high degree of suspicion is necessary, and the patient should be asked about the temporal relationship between symptoms and work. It is unsurprising, then, that a recent study performed in primary care centers in Catalonia found that WRA is underdiagnosed, a situation exacerbated by the fact that many workers are unaware that their job may cause their disease or make it worse.⁸ In Spain, underdiagnosis means that WRA often remains undetected

and undiagnosed as such by the specialized departments of the occupational health system, the risk prevention units of companies, and the Workplace Accident and Occupational Diseases Insurance area of the Spanish Social Security (MATEPSS), and ends up being diagnosed and treated as a common illness within the primary care network.⁸

A recent study suggests that OA and WEA can be distinguished by certain functional and biological differences, although the methods most commonly used for diagnosing WRA do not always expose these differences.⁹ Taking into account the general agreement that a patient with a previous diagnosis of asthma may develop OA, and that the concomitant onset of asthma associated with work does not rule out that it is a WEA, it appears that the specific provocation testing is the only method capable of clearly differentiating between both entities.¹⁰ One of the recommendations of a recent European Respiratory Society (ERS) task force was that this test must always be done if there are doubts regarding an OA diagnosis established using the conventional methods.¹¹

Diagnosing and differentiating correctly between these diseases is of great importance. For one thing, it can help advance knowledge of the causes and mechanisms involved, leading to better treatment and prevention. Moreover, this is a disease in which an incorrect diagnosis may have important socioeconomic consequences for both the patient and society, and the correct diagnosis of WRA reduces associated costs dramatically.¹² We have already mentioned the study by Vila-Rigat et al.,⁸ conducted in a primary care setting, which suggested that among the asthma cases monitored in primary care centers of the National Health System, 33% show an association between the disease and the workplace; in 18%, this association originates from the job itself, and in 15% it is aggravated by conditions in the workplace. In WRA, economic compensation is a critical topic, and varies widely among European countries. In Spain, Royal Decree (RD) 1299/2006 of November 10, 2006 (modified on December 19, 2015) lists the occupational diseases recognized by the Social Security system, and establishes criteria for classification and registration. In this list, OA appears in group 4, which includes substances with high molecular weight (generally proteins) and low molecular weight (generally chemicals). However, while OA is recognized as an occupational disease,

☆ Please cite this article as: Cruz MJ, Muñoz X. Asma relacionada con el trabajo: ¿en los albores del conocimiento? Arch Bronconeumol. 2017;53:180–181.

* Corresponding author.

E-mail address: mj.cruz@vhir.org (M.J. Cruz).

the same is not true of WEA, even though when correctly diagnosed it can be recognized as a workplace accident.

Clearly, then, in our opinion, all professionals treating asthmatics must be made aware of the importance of determining if the disease is work-related or not. If it is, patients should be referred to centers where a clear diagnosis of either OA or WEA can be made. Databases featuring correctly diagnosed patients will help us further our knowledge of the physiopathological mechanisms involved in both entities, seek out therapeutic targets, establish the best treatments, and promote preventive measures. Right now, the critical (and legal) decision of whether or not to remove a patient from the workplace after diagnosis of OA or WEA remains unclear from a medical perspective, despite the recommendation that workers with OA be removed. If respiratory disease originating in the workplace, including WRA, were notifiable, as is the case in some countries, the health and safety of many workers might improve considerably.

Acknowledgements

M.J.C. receives funding from the Miguel Servet Research Program of the Instituto de Salud Carlos III (CP12/03101).

References

1. Global Initiative for Asthma. Global strategy for asthma management and prevention; 2016. Available from: <http://www.ginasthma.org> [accessed 05.07.16].
2. Malo JL, Tarlo SM, Sastre J, Martin J, Jeebhay MF, Le Moual N, et al. ATS ad hoc committee on Asthma in the Workplace. An official American Thoracic Society Workshop Report: presentations and discussion of the fifth Jack Pepys Workshop on Asthma in the Workplace. Comparisons between asthma in the workplace and non-work-related asthma. *Ann Am Thorac Soc*. 2015;12:S99–110.
3. Kogevinas M, Zock JP, Jarvis D, Kromhout H, Lillienberg L, Plana E, et al. Exposure to substances in the workplace and new-onset asthma: an international prospective population-based study (ECRHS-II). *Lancet*. 2007;370:336–41.
4. Tarlo SM, Lemiere C. Occupational asthma. *N Engl J Med*. 2014;370:640–9.
5. Henneberger PK, Redlich CA, Callahan DB, Harber P, Lemière C, Martin J, et al. ATS Ad Hoc Committee on Work-Exacerbated Asthma. An official American Thoracic Society statement: work-exacerbated asthma. *Am J Respir Crit Care Med*. 2011;184:368–78.
6. Tarlo SM. Update on work-exacerbated asthma. *Int J Occup Med Environ Health*. 2016;29:369–74.
7. Munoz X, Viladrich M, Manso L, del Pozo V, Quirce S, Cruz MJ, et al. Evolution of occupational asthma: does cessation of exposure really improve prognosis? *Respir Med*. 2014;108:1363–70.
8. Vila-Rigat R, Panadès Valls R, Hernández Huet E, Sivecas Maristany J, Blanché Prat X, Muñoz-Ortiz L, et al. Prevalence of work-related asthma and its impact in primary health care. *Arch Bronconeumol*. 2015;51:449–55.
9. Lemière C, Boulet LP, Chabouille S, Forget A, Chiry S, Villeneuve H, et al. Work-exacerbated asthma and occupational asthma: do they really differ? *J Allergy Clin Immunol*. 2013;131:704–10.
10. Cruz MJ, Muñoz X. The current diagnostic role of the specific occupational laboratory challenge test. *Curr Opin Allergy Clin Immunol*. 2012;12:119–25.
11. Vandenplas O, Suojalehto H, Aasen TB, Baur X, Burge PS, de Blay F, et al. ERS Task Force on Specific Inhalation Challenges with Occupational Agents. Specific inhalation challenge in the diagnosis of occupational asthma: consensus statement. *Eur Respir J*. 2014;43:1573–87.
12. Lemiere C, To T, de Olim C, Ribeiro M, Liss G, Lougheed MD, et al. Outcome of work-related asthma exacerbations in Quebec and Ontario. *Eur Respir J*. 2015;45:266–8.