

## Chronic Cough: New Perspectives in Its Diagnosis and Treatment<sup>☆</sup>

### Tos crónica: nuevas perspectivas en diagnóstico y tratamiento

Dear Editor:

At the recent 2011 ERS congress in Amsterdam, the founding meeting took place of the ERS Task Force on the "Diagnosis and classification of chronic cough – Consensus Document". Briefly, two objectives were defined: one, to consolidate the new concept of chronic cough hypersensitivity syndrome; and two, the need to group within this syndrome all those entities associated with chronic cough, as a similar clinical history can be observed among them and there is a common physiopathological base, which is the reduced threshold of the cough reflex linked to the vagus nerve. The majority of the cough episodes are acute, but in some non-smoker individuals who do not have chronic airflow obstruction and who are not taking ACE inhibitors and in those whom pathological thoracic radiography has been ruled out, the cough can persist for more than 8 weeks, becoming an uncomfortable and distressing problem. Types of triggers have been identified for the cough reflex, these being thermal, chemical and mechanical, and even limited stimuli, such as changes in temperature, strong perfume or singing, lengthy speech or laughing can cause coughing crises. Up to two-thirds of patients with chronic cough admit to having these triggers<sup>1</sup> and, furthermore, they frequently report other symptoms such as the "urgent need to cough", the sensation of itchiness in the throat, sudden breathlessness and occasionally chest pain or dyspnea. When a chronic cougher presents with this group of triggers and symptoms, he/she is currently considered affected by the chronic cough hypersensitivity syndrome. Within this syndrome various phenotypes are differentiated. Up until a few years ago, three were recognized: eosinophilic inflammation of the airway, gastroesophageal reflux (GERD) and that linked to rhinitis-sinusitis. Recently, otorhinolaryngologists have defined another phenotype associated with laryngeal neuropathy.<sup>2</sup> This "unifying" concept, with a common connection of chronic cough and innervation of the vagus, has led to contemplating the respiratory tract together with the upper digestive tract and the larynx as one "physiological unit", with the anatomical correlation in the forked axis that connects the stomach and the lungs through the laryngopharynx.

A priori, any event that reduces the reflex threshold in those organs where there are vagus receptors can trigger coughing crises. For instance, bronchospasm, acidification of the esophagus or the inflammation of the upper respiratory tract are known associations of chronic cough. Considered one by one, however, none of them alone evokes the start of the cough reflex<sup>3</sup>; therefore, it is now assumed that for chronic cough to start up and continue, it is necessary for there to be integration among different afferent pathways

of the cough reflex, which is still not well understood. This hypothesis has a parallel pattern in clinical practice because if we consider the three most common associations of chronic cough – asthma, GERD and inflammatory disease of the upper respiratory tract – it is very frequent for them to be diagnosed simultaneously in a patient with chronic cough.<sup>4</sup>

The most common protocols for chronic cough generally assume two prognoses: one with an easy reversion of the cough, either due to smoking, eosinophilic inflammation of the airway (asthma-type cough, atopic cough and eosinophilic bronchitis) or due to taking ACE inhibitors; and the second, which is difficult to revert, such as those associated with GERD or cough that originates in the larynx.<sup>5</sup> In many cases, whether the cough continues to be persistent depends on whether its study is rigorous and in-depth. Nevertheless, on occasion no association that is susceptible to treatment is confirmed, or even when the treatment is meticulous there is still no alleviation of the cough and it becomes idiopathic.<sup>6</sup> Current research is dealing with these cases to develop new, more specific medication that reduces the hypersensitivity in target areas of the neuronal pathways regulating the cough reflex in order to reestablish a reasonable reflex, thus avoiding coughing from becoming a paradoxically useless protection mechanism that may considerably affect quality of life.

## References

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Adalberto Pacheco\*, Member of the ERS Task Force "The diagnosis and classification of chronic cough. A consensus statement" (2011)

*Unidad de Tos Crónica, Servicio de Neumología, Hospital Ramón y Cajal, Madrid, Spain*

\* Corresponding author.

E-mail address: [Apacheco.hrc@salud.madrid.org](mailto:Apacheco.hrc@salud.madrid.org)

URL: <http://www.doctorpachecogalvan.es>

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