

## EDITORIAL

### GASTROESOPHAGEAL REFLUX AND ASTHMA

*The fact that some patients with asthma or chronic cough, which is sometimes taken for asthma, do not improve with the usual treatments is a cause of concern. In both cases, a common course of action is to increase the dose of inhaled corticoids, add a long acting  $\beta_2$ -agonist or leukotriene antagonist or, as a last resort, prescribe systemic corticoids. Even with these measures, some patients do not experience the desired improvement, which begs questions ranging from poor treatment compliance to the possibility of an incorrect diagnosis or the existence of an unknown trigger causing symptom persistence.*

*Obviously, the first thing to investigate is whether the patient is taking the medication correctly. Special emphasis should be placed on inhalation techniques which, especially in children, are often incorrectly performed. Undoubtedly, treatment is prescribed after a thorough diagnosis, based on clinical findings, appropriate diagnostic tests and respiratory function study. Nevertheless, when the expected improvement does not occur, the possibility of an incorrect diagnosis or the involvement of unexpected triggers should be considered.*

*Among the latter, gastroesophageal reflux (GER) undoubtedly plays an important role, although not all studies support this view. Approximately one-third of the adult general population has GER, with a predominance of gastrointestinal symptoms (heartburn, epigastric pain) although some patients do not experience any symptoms (silent GER)<sup>1</sup>. An equal percentage is affected in the pediatric population until the age of 4-5 years, while 5 % continues to have gastrointestinal symptoms<sup>2</sup>. Likewise, GER is associated with respiratory disease and has been detected in 44 % of adult asthmatics and in 50 % of patients with chronic cough, although the link between GER and respiratory symptoms has been questioned<sup>3</sup>. In asthmatic children aged between 6 months and 6 years not responding to treatment, Thomas et al reported that scintigraphy showed GER in 23 % of the children without epigastric symptoms compared with 38.5 % of those with these symptoms<sup>4</sup>. Gorenstein et al reported that 50 % of asthmatic children had "silent" GER and that esophageal pH metry provided similar results to those in children with symptomatic GER but without respiratory disease<sup>5</sup>.*

*Despite these and many other studies relating the poor clinical course of asthma or chronic cough with GER, this disease is not universally accepted as a cause of therapeutic failure. Nevertheless, other authors have reached more encouraging conclusions,*

based both on the correlation between asthma-chronic or nocturnal cough/GER and on the improvement achieved by antireflux therapy<sup>6-8</sup>.

Numerous studies have demonstrated the mechanisms through which GER can cause or aggravate respiratory symptoms and consequently this possibility should be considered in patients not responding to treatment. Regurgitation of gastric contents to the larynx produces choking and asphyxia which can be extremely serious. Aspiration of gastric contents causes chemical bronchitis with diverse clinical expression. However, the mechanisms most frequently related to asthma are bronchospasm caused by a vagal reflex that starts in esophageal receptors stimulated by gastric chlorhydric acid and ends in the parasympathetic bronchial terminations where the bronchospasm is produced by the acetylcholine secreted<sup>1,8,9</sup>. Likewise, the reflux can be caused by the esophageal afferent fibers of the sensory neurons that project their axons in the airways where the neuropeptides that modulate the excitability of parasympathetic neuronal ganglia are released, provoking bronchoconstriction<sup>8</sup>.

However GER may not be a primary process in the sense that it is produced by a failure of physiological antireflux mechanisms, especially relaxation of the lower esophageal sphincter; rather, the same pulmonary insufflation that takes place in patients with long-standing asthma or its most severe forms stretches the esophagus due to pressure on the diaphragm, making His' angle disappear and reducing pressure in the cardia, thus facilitating reflux. Certain antiasthmatic drugs, such as  $\beta_2$ -agonists and especially theophylline, have also been implicated in the pathogenesis of GER, and consequently about the 1980s a study was performed to examine the relationship between GER and resistant asthma<sup>10</sup>. However, although this drug is hardly used today, GER should not be forgotten as a possible reason for the unfavorable clinical course of the above-mentioned processes and should be investigated, preferably through 24-hour esophageal pH metry. Given the efficacy of antireflux therapy reported by numerous authors, even in patients in whom pH metry or other diagnostic methods cannot be performed for whatever reason, trial therapy with proton pump inhibitors is indicated, as the most effective treatment with good tolerance.

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