



EDITORIAL

The role of induced sputum eosinophils in asthmatic patients

Le rôle d'éosinophiles dans l'expectoration induite chez les patients asthmatiques

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Over the last decades, the analysis of inflammatory cells by induced sputum, especially for eosinophils in asthmatic patients help physicians to a better understanding of airway inflammation in these patients [1]. Induced expectoration appears simple and better tolerated than other techniques such as bronchial endoscopy with biopsy. However, the optimal method for induction, its tolerance, the sputum treatment protocol and the analysis of cell outcomes require great attention and rigor at all times [2]. For induction, two methods are proposed: a protocol using high concentrations of hypertonic serum and a protocol that starts with an isotonic saline aerosol in severe or uncontrolled patients.

During sputum induction, the monitoring of the respiratory function is essential and criteria for stopping induction are necessary (in practice a 20% fall in FEV₁ compared to the baseline). The induced sputum requires a trained staff with the presence of physician on site to provide surveillance. However, to obtain a cytological result, it is necessary to treat the sample. Two methods were used, the first selecting the mucous plugs and the solid parts of the expectoration, the other considering all the secretions including salivary contamination. However, the analysis of eosinophils in the sputum supernatant must be validated in each laboratory.

For the diagnosis of asthma, more than 80% of asthmatics not treated with corticosteroids have more than 3% of eosinophils in their sputum. The sensitivity and specificity of a 3% threshold of eosinophils for the diagnosis of asthma places this technique

well before reversibility after bronchodilators and blood eosinophilia.

In addition, induced sputum eosinophils might reflect the control or severity of asthma. Therefore, some severe asthmatics or patients in crisis are capable of having sputum containing predominantly neutrophils unrelated to a characteristic bacterial infection. Eosinophilia induced sputum is better correlated with recent or future loss of asthma control than with the severity. Moreover, the sputum induction may be used to evaluate drugs or adherence to treatment. Hence, eosinophilia induced sputum is very sensitive to the use of corticosteroid therapy. It is therefore a potential marker of the clinical and functional respiratory response and therapeutic compliance at least for these drugs. Indeed, the persistence of eosinophilia under corticosteroids must first of all consider the hypothesis of non-adherence therapy.

The complexity of the mechanisms accompanying airway diseases, especially for asthma, necessitates the development of new diagnostic and monitoring tools. The eosinophilia of expectoration could make it possible to adjust the therapeutic decline, which is a little-known domain in the follow-up of controlled asthmatics. On the other hand, it is possible to reduce the number and severity of exacerbations by anticipating the increase of anti-inflammatory treatments (inhaled corticosteroids). The near future will allow us to appreciate the potential for passage into the clinical practice of cytological and biological analysis of induced sputum, subject to a reasonable cost-benefit ratio [3,4].

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CONFLIT OF INTEREST

Non.

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