

Correspondence

Airway wall structural remodeling from endo-bronchial biopsies: What does it really mean?

To the Editor:

We read with interest the study from Siddiqui et al¹ in the August issue of the *Journal*. The authors reported that remodeling features are not specific for asthma. Airway hyperresponsiveness was not associated with remodeling features but more related to airway smooth muscle infiltration by mast cells. It is difficult from the present study to extend these conclusions to severe asthma.

First, severe asthma is a heterogeneous disease, and from the lung function data, it seems that Siddiqui et al¹ explored few patients (n = 10) and mainly with a “frequent exacerbators phenotype” rather than patients with a severe permanent airflow obstruction.²

Second, it has been reported on several occasions that severe asthma is associated with a more pronounced neutrophilic rather than eosinophilic inflammatory phenotype. Thus the association between remodeling features and eosinophilic inflammation is not clearly demonstrated.

Third, in a study published in the *Journal*³ involving 50 patients per group, we were able to report that increased reticular basement membrane thickness was specifically associated with severe asthma (sensitivity and specificity of 89% and 67.6%, respectively, when compared with chronic obstructive pulmonary disease with a similar methodology). The specificity of collagen III immunostaining as an overall marker of airway remodeling is still to be established,⁴⁻⁶ even in autopsies studies.

Finally, if airway smooth muscle is an important player in this complex network, the data reported for severe asthma here did not confirm those from previous findings using different methodologies. The number of cases for mild asthma might contribute to the statistical significance of the overall analysis.

This study mainly reaffirms the lack of relationship between eosinophilic inflammation and airway hyperresponsiveness when

comparing asthma with eosinophilic bronchitis; however, it does not consider that severe asthma might represent a distinct clinical and functional phenotype in which remodeling features are important. We strongly believe that intensive efforts are still required to better characterize and understand the real meaning of structural changes of the airways in bronchial diseases to provide new ways to better treat these heterogeneous clinical entities.

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REFERENCES

1. Siddiqui S, Mistry V, Doe C, Roach K, Morgan A, Wardlaw A, et al. Airway hyperresponsiveness is dissociated from airway wall structural remodeling. *J Allergy Clin Immunol* 2008;122:335-41.
2. Chanez P, Wenzel SE, Anderson GP, Anto JM, Bel EH, Boulet LP, et al. Severe asthma in adults: what are the important questions? *J Allergy Clin Immunol* 2007;119:1337-48.
3. Bourdin A, Neveu D, Vachier I, Paganin F, Godard P, Chanez P. Specificity of basement membrane thickening in severe asthma. *J Allergy Clin Immunol* 2007;119:1367-74.
4. Chu HW, Halliday JL, Martin RJ, Leung DY, Szefer SJ, Wenzel SE. Collagen deposition in large airways may not differentiate severe asthma from milder forms of the disease. *Am J Respir Crit Care Med* 1998;158:1936-44.
5. James AL, Maxwell PS, Pearce-Pinto G, Elliot JG, Carroll NG. The relationship of reticular basement membrane thickness to airway wall remodeling in asthma. *Am J Respir Crit Care Med* 2002;166:1590-5.
6. Wilson JW, Li X. The measurement of reticular basement membrane and submucosal collagen in the asthmatic airway. *Clin Exp Allergy* 1997;27:363-71.

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