

## Correspondence

### Modern histamine H<sub>1</sub>-receptor antagonists in the unified airway

To the Editor:

Deruaz and colleagues<sup>1</sup> examined the relative efficacies of desloratadine and levocetirizine in attenuating the response to nasal provocation with grass pollen in sensitized individuals. However, the findings of the study are surprising in light of recent published data with regard to the relative effects of modern histamine H<sub>1</sub>-receptor antagonists in the unified airway.<sup>2,3</sup>

Nasal congestion, as measured by peak nasal inspiratory flow and acoustic rhinometry, was unaffected by desloratadine and levocetirizine compared with placebo. The lack of difference between the histamine H<sub>1</sub>-receptor antagonists is not surprising; however, the finding of no detectable difference from placebo was unexpected. There are 2 possible explanations for this apparent lack of effect compared with placebo. First, peak nasal inspiratory flow and the minimal cross-sectional area were measured after nasal lavage, and this may have increased the threshold for detecting any discernible changes in nasal congestion after treatment with desloratadine and levocetirizine. Second, nasal provocation with an allergen such as grass pollen may be less sensitive in detecting responses to histamine H<sub>1</sub>-receptor antagonists compared with other provocative agents, such as adenosine monophosphate. Adenosine monophosphate has been shown to correlate well with airway inflammation.<sup>4</sup>

Further studies are now required to evaluate the relative long-term effects of modern histamine H<sub>1</sub>-receptor antagonists in the unified airway and to assess their effects on nasal and bronchial inflammatory cells.

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### Reply

To the Editor:

Lee and colleagues raised a difficult and pertinent question in tackling the discrepant effects of the anti-H<sub>1</sub> antihistamines levocetirizine and desloratadine on nasal blockage observed in 2 recent articles.<sup>1,2</sup> First, the study designs were markedly different. One of the studies was performed in patients with perennial allergic rhinitis challenged with adenosine monophosphate (AMP),<sup>2</sup> and the other was performed in patients allergic to grass pollen in a nasal provocation test with allergen outside the season.<sup>1</sup> Furthermore, in terms of challenge methods, the studies differed in the sequence of events leading to nasal obstruction measurement. As described by Deruaz et al,<sup>1</sup> nasal congestion was measured by peak nasal inspiratory flow and acoustic rhinometry (AR) after nasal lavage. We strongly believe that part of the conflicting data, including our own work,<sup>3</sup> may be partly explained by similar sensitive differences in experimental protocols. As suggested, this sequence of events might have increased the threshold for detecting changes in overall nasal obstruction. However, our approach intended to preferentially evaluate mucosal edema, excluding the secretion-dependent component of nasal flow impairment, and to test nasal congestion rather than nasal obstruction. Data are overall consistent, independent of methodology (either objective [AR and peak nasal inspiratory flow] or subjective [visual analog scale]) and unbiased by patients' active participation level (AR). By itself, challenge with allergen was sensitive enough to detect inhibitory responses to anti-H<sub>1</sub> antihistamines on nasal obstruction in a previous study that did not include nasal lavage.<sup>3</sup> Nonetheless, although allergen challenge induced far more intense nasal blockage with the highest doses than AMP challenge, we did not observe in our recent study an inhibitory effect of anti-H<sub>1</sub> antihistamines even with lower stimulation doses, for which optimal sensitivity would have been expected. Whatever the fine mechanisms of AMP, which mainly targets primed mast cells and histamine secretion,<sup>4</sup> the spectrum of inflammatory mediators induced by allergen challenge may be qualitatively and quantitatively significantly different. In agreement with the observed absence of effect of a single dose of either desloratadine or levocetirizine on nasal congestion, we did not demonstrate any reduction in late phase inflammatory markers in nasal lavage fluid in contrast to albumin as an early phase marker.<sup>1</sup> In this respect, nasal

allergen provocation might be more representative of real life to test so-called modern anti-H<sub>1</sub> antihistamines.

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