12. Shapiro GG, Wighton TG, Chinn T, Zuckrman J, Eliassen AH, Picciano JF, et al. House dust mite avoidance for children with asthma in homes of low-income families. J Allergy Clin Immunol 1999;103:1069-74.
13. Cloosterman SG, Schermer TR, Bijl-Hofland ID, Van Der HS, Brunekreef B, Van Den Elshout FJ, et al. Effects of house dust mite avoidance measures on Der p 1 concentrations and clinical condition of mild adult house dust mite-allergic asthmatic patients, using no inhaled steroids. Clin Exp Allergy 1999;29:1336-46.
14. Rijssenbeek-Nouwens LH, Oosting AJ, Bruin-Weller MS, Bregman I, de Monchy JG, Postma DS. Clinical evaluation of the effect of anti-allergic mattress covers in patients with moderate to severe asthma and house dust mite allergy: a randomised double blind placebo controlled study. Thorax 2002;57:784-90.
15. Rijssenbeek-Nouwens LH, Oosting AJ, de Monchy JG, Bregman I, Postma DS, Bruin-Weller MS. The effect of anti-allergic mattress encasings on house dust mite-induced early- and late-airway reactions in asthmatic patients. A double-blind, placebo-controlled study. Clin Exp Allergy 2002;32:117-25.

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Clinical significance of bronchoalveolar cell profiles in childhood asthma

To the Editor:

Much though I agree with the findings of Just and colleagues[1] in relation to bronchoalveolar lavage cell profiles in childhood asthma, I was disappointed that their references to the literature were far from complete. Indeed, their claim of being able to provide the first evidence that eosinophilic inflammation is related to allergic sensitization is incorrect.[1] In fact, the Belfast group, whose work the authors cite (in their reference no. 3), showed in 1997 that atopic asthmatics have significantly higher eosinophil counts than virus-associated wheezers. However, they also showed that there were significantly higher levels in atopic asthmatics than in atopic nonasthmatics. This suggests that there is more to airway eosinophilic inflammation than just allergic sensitization itself.[2]

These observations are further elaborated on in 2 studies that have measured eosinophil cationic protein levels in bronchoalveolar lavage in atopic asthmatics compared with virus-associated infant wheezers.[3,4] Furthermore, there have been publications on neutrophilic inflammation in childhood in addition to those quoted by the authors in relation to adults. Indeed, the presence of neutrophilic inflammation has been directly associated with greater disease severity.[5,6] In fact, another study showing increased neutrophil counts in infant wheezers correlated this with levels of eosinophil cationic protein. There is therefore a very clear indication from several studies that neutrophils have the potential to play a significant role in the genesis of the airway inflammation of asthma.[7]

Finally, I think it is most important to give credit to Ferguson and colleagues,[8] who some 10 years ago were the very first investigators to demonstrate associations between bronchial eosinophilia and childhood asthma.

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REFERENCES

1. Just J, Fournier L, Momas I, Zambetti C, Sahraoui F, Grimfeld A. Clinical significance of bronchoalveolar eosinophils in childhood asthma. J Allergy Clin Immunol 2002;110:42-4.
2. Stevenson EC, Turner G, Heaney LG, Schock BC, Taylor R, Gallagher T, et al. Bronchoalveolar lavage findings suggest two different forms of childhood asthma. Clin Exp Allergy 1997;27:1027-35.
3. Ennis M, Turner G, Schock BC, Stevenson EC, Brown V, Fitch PS, et al. Inflammatory mediators in bronchoalveolar lavage samples from children with and without asthma. Clin Exp Allergy 1999;29:362-6.
4. Marguet C, Dean TP, Basuyau JP, Warner JO. Eosinophil cationic protein and interleukin-8 levels in bronchial lavage fluid from children with asthma and infantile wheeze. Pediatr Allergy Immunol 2001;12:27-33.
5. Marguet C, Jouen-Boedes F, Dean TP, Warner JO. Bronchoalveolar cell profiles in children with asthma, infantile wheeze, chronic cough or cystic fibrosis. Am J Respir Crit Care Med 1999;159:1533-1540.
6. Barbato A, Panizzolo C, Gheno M, Sainati L, Favero E, Faggian D, et al. Bronchoalveolar lavage in asthmatic children: evidence of neutrophil activation in mild to moderate persistent asthma. Pediatr Allergy Immunol 2001;12:73-7.
7. Azevedo I, De Blic J, Vargaftig BB. Increased eosinophil cationic protein levels in bronchoalveolar lavage from wheezy infants. Pediatr Allergy Immunol 2001;12:65-72.
8. Ferguson AC, Whitelaw M, Brown H. Correlation of bronchial eosinophil and mast cell activation with bronchial hyperresponsiveness in children with asthma. J Allergy Clin Immunol 1992;90:609-13.

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Reply

To the Editor:

We acknowledge Dr Warner's criticisms. In fact, however, we did not claim that our work provided the first evidence that eosinophilic inflammation is related to allergic asthma. Indeed, we mentioned that our results were in total agreement with other works cited in our article and particularly with those of Stevenson and colleagues.[1] It should be noted that we did not have enough space to cite all relevant references in our brief communication.

However, we did provide the first evidence that eosinophilic inflammation is mainly related to allergic sensitization in asthmatic children, in contrast to their infant counterparts. It should be noted that our population of asthmatic infants differed from previously investigated populations of infants with virus-associated wheeze, inasmuch as ours included selected asthmatic infants with a high risk of persistence of asthma into childhood.[2] Moreover, if eosinophil cationic protein levels in bronchoalveolar lavage was elevated in virus-associated infant wheezers, it was correlated with elevated neutrophil counts but not with elevated eosinophil counts.[3]

Our results showing an association between neutrophilic inflammation and asthma severity were in agreement with other published data pertaining to adults, and they were reminiscent of a similar observation made in children.[4] However, our results showed—as new evidence—that neutrophilic inflammation was (a) not statistically related to bacterial airway infection and (b) significantly related to persistent asthma and asthma duration.[2]

In conclusion, our results might reflect the concept that the nature of asthma inflammation changes during childhood. Indeed, allergic sensitization appeared to be related mainly to eosinophils in asthmatic children, whereas both asthma severity and asthma duration were related to neutrophils.

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REFERENCES

1. Stevenson EC, Turner G, Heaney LG, Schock BC, Taylor R, Gallagher T, et al. Bronchoalveolar lavage findings suggest two different forms of childhood asthma. Clin Exp Allergy 1997;27:1027-35.
2. Just J, Fournier L, Momas I, Zambetti C, Sahraoui F, Grimfeld A. Clinical significance of bronchoalveolar eosinophils in childhood asthma. J Allergy Clin Immunol 2002;110:42-4.
3. Azevedo I, de Blic J, Vargaftig BB, Bachelet M, Scheinmann P. Increased eosinophil cationic protein levels in bronchoalveolar lavage from wheezy infants. Pediatr Allergy Immunol 2001;12:65-72.
4. Barbato A, Panizzolo C, Gheno M, Sainati L, Favero E, Faggian D, et al. Bronchoalveolar lavage in asthmatic children: evidence of neutrophil activation in mild-to-moderate persistent asthma. Pediatr Allergy Immunol 2001;12:73-7.

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