

THE JOURNAL OF Allergy AND Clinical Immunology

November 1999 • Volume 104 • Number 5

Relationship between duration of asthma and asthma severity

- [Previous article](#) in Issue
- [Next article](#) in Issue
- [Drug links](#) from Mosby's DrugConsult
- [Genetic information](#) from OMIM
- Citation of this Article
 - View on [PubMed](#)
 - Download in [citation manager format](#)
 - Download in [Medlars format](#)
- [Related articles](#) in PubMed

To the Editor:

Zeiger et al (Zeiger RS, Dawson C, Weiss S, Childhood Asthma Management Program Research Group. Relationships between duration of asthma and asthma severity among children in the Childhood Asthma Management Program (CAMP). J Allergy Clin Immunol 1999;103:376-87) concluded that asthma duration is associated with lower lung function and greater methacholine responsiveness. This conclusion is seemingly in contradiction with our long-term study,¹ which concluded that pulmonary function deteriorated over time in patients treated with bronchodilators only, whereas it actually improved in patients treated with anti-inflammatory drugs (cromolyn sodium or inhaled corticosteroids).

Several facts are worth mentioning:

1. The effect of duration in the study of Zeiger et al was very small and the statistical significance is mainly due to the very large sample size (more than 1000 children). Thus, for methacholine responsiveness, duration of illness is only responsible for 1.25% of variance, and for FEV₁ (prebronchodilator) the number is 3.1%.
2. The authors' own data suggest that anti-inflammatory drugs have an effect on pulmonary function because patients previously receiving cromolyn sodium had a

significantly higher FEV₁ than those not receiving this drug.

3. Careful reading of the study's methods published elsewhere² reveals that cromolyn sodium and inhaled corticosteroids were discontinued 4 weeks before the methacholine test and 6 weeks before the spirometry measurements. Previous studies have clearly established that both nonsteroidal (cromolyn or nedocromil) and steroidal anti-inflammatory treatment improve both pulmonary function^{3,4} and bronchial hyperreactivity,^{4,5} but the effect disappears shortly after discontinuation of these drugs.^{4,6}

Thus, as soon as 2 weeks after discontinuation of inhaled corticosteroids, the effect on FEV₁ was significantly reduced⁴ and the effect on bronchial hyperreactivity was significantly reduced in one study⁴ and completely gone in another.⁷ Similar results were described with nonsteroidal anti-inflammatory drugs.⁶

In view of these facts, the study by Zeiger et al cannot exclude the possibility that patients treated with anti-inflammatory drugs do not have a progressive deterioration with time in pulmonary function and bronchial hyperreactivity, and therefore their conclusion is not that far from the conclusion of our study, namely, that only patients not treated with anti-inflammatory drugs deteriorate with time.

Deterioration with duration of the disease is an important concept because it influences the continuing debate about the need for early intervention and the nature of that intervention in the prevention of the possibility of irreversible airway obstruction. Therefore it is very important that the correct conclusions are drawn from the study of Zeiger et al.

Peter König, MD

*University of Missouri Health Sciences Center Hospital and Clinics Department of Child Health School of Medicine N708 Health Sciences Center One Hospital Drive
Columbia, MO 65212*

1/8/101787

References

TOP

1. König P, Shaffer J. The effect of drug therapy on long-term outcome of childhood asthma: a possible preview of the international guidelines. *J Allergy Clin Immunol* 1996;98:1103-11.

MEDLINE

ABSTRACT

FULL TEXT

2. Childhood Asthma Management Program. The Childhood Asthma Management Program (CAMP): design, rationale, and methods. *Control Clin Trials* 1999;20:91-120.

MEDLINE

3. Smith JM, Devey GF. Clinical trial of disodium cromoglycate in treatment of asthma in children. *BMJ* 1968;2:340-4.
4. Verberne AAPH, Frost C, Roorda RJ, van der Laag H, Kerrebijn KF, Dutch Paediatric Asthma Study Group. One year treatment with salmeterol compared with beclomethasone in children with asthma. *Am J Respir Crit Care Med* 1997;156:688-95.

MEDLINE

5. Hoag JE, McFadden ER. Long-term effect of cromolyn sodium on nonspecific bronchial hyperresponsiveness: a review. *Ann Allergy* 1991;66:53-63.

MEDLINE

6. Bel EH, Timmers MC, Hermans J, Dijkman JH, Sterk PJ. The long-term effects of nedocromil sodium and beclomethasone dipropionate on bronchial responsiveness to methacholine in nonatopic asthmatic subjects. *Am Rev Respir Dis* 1990;141:21-8.

MEDLINE

7. Simons FER, Canadian Beciomethasone Dipropionate-Salmeterol Xinafoate Study Group. A comparison of beclomethasone, salmeterol, and placebo in children with asthma. *N Engl J Med* 1997;337:1659-65.

MEDLINE
