compared with nonatopic subjects (123 ± 80 vs 45 ± 36 IU/mL; \( P < .01 \)). There was no change in total IgE level in those in the nonatopic group, but the atopic subjects had a nonsignificant increase in IgE level on days 8 and 10 (146 ± 112 IU/mL). Of the 8 nonatopic patients, only 3 had negative skin-test results to all antigens on all 3 postinoculation test days. The mean number of positive wheal responses to allergens for all patients was 1.7 ± 2.3, 4.4 ± 3.8, 3.6 ± 3.5, and 3.9 ± 3.6 at baseline and days 3, 6, and 21, respectively (\( P < .01 \) versus baseline for all pairings). For patients with positive skin-test results at baseline, mean wheal and flare area provoked by those allergens increased after RSV exposure. The increased number of positive responses to skin testing was noted for both seasonal and perennial aeroallergens.

CONCLUSIONS. The results may have some implication in explaining complications of RSV infection such as otitis media, asthma exacerbation, and subsequent development of asthma.

REVIEWER COMMENTS. There has long been a chicken-and-egg question when it comes to RSV infection in childhood and subsequent development of asthma. That is, does RSV predispose to later recurrent wheezing illnesses, or does the predisposition to wheeze lead to worse outcomes with RSV infection? Are children with an atopic predisposition more likely to have a severe RSV infection, or are those with severe infection more likely to develop atopy? This small study did not answer the question, but it provides a hint that RSV infection itself might affect immunologic responsiveness to aeroallergens, at least in the short-term. The study results cannot be extrapolated to make any long-term conclusions. Furthermore, the study was undertaken in healthy adults. It would be unethical to intentionally infect infants and toddlers with RSV at an age when they might be most susceptible to the risks of environmental influences on the development of atopy and to the risks of the infection itself.

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Suppression of IFN-Gamma Production in Atopic Group at the Acute Phase of RSV Infection


PURPOSE OF THE STUDY. Several studies have suggested that respiratory syncytial virus (RSV) bronchiolitis induces a change in the cytokine-production profile in childhood. The authors of this study sought to determine if the RSV-induced cytokine production was affected by the patient’s atopic background.

STUDY POPULATION. Fourteen children between 1 month and 14 years of age who were admitted to the hospital with RSV infection and divided into 2 groups: those who were nonatopic and those who were atopic.

METHODS. Interferon-γ (IFN-γ) and interleukin 4 (IL-4) in the supernatant of peripheral blood mononuclear cells was measured after culture for 24 hours in the presence of phytohemagglutinin, IL-12, or IL-18.

RESULTS. In RSV-infected infants with atopic diseases, IFN-γ production from IL-12– or especially IL-18–stimulated peripheral blood mononuclear cells was subtotally suppressed in the acute phase, whereas in RSV-infected infants without atopic diseases, IFN-γ production was not suppressed in the acute phase.

CONCLUSIONS. The IFN-γ suppression observed in the atopic group was not caused by the immaturity of the infants’ immune system, because reduced IFN-γ production to RSV was not observed in the infants in the nonatopic group. IFN-γ suppression in regard to RSV infection might be caused by some genetic factor involved in the development of atopic disease, such as IL-18 signal cascade.

REVIEWER COMMENTS. Several studies have suggested a link between RSV infection and the development of persistent wheezing later in childhood. However, a causal role for RSV infection in early life in the development of asthma is not clear. The results of this study indicate that there may be a genetic predisposition to T-helper 2–type immune responses to RSV in atopic children, which may play a role in the development of recurrent wheezing in this subset of children.

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Asthma Severity and Atopy: How Clear Is the Relationship?


PURPOSE OF THE STUDY. The term “atopy” can refer to allergic conditions such as allergic rhinitis, asthma, eczema, and food allergy, which cluster in families. It can also be defined as the tendency to generate an immunoglobulin E (IgE) response to specific allergens. Is there a relationship between such IgE responses and the severity of asthma?

STUDY POPULATION. The study included 400 children (aged 7–18 years) with asthma (documented episodes of wheezing in the previous 12 calendar months and physician diagnosis).

METHODS. Patients completed a standardized observer-administered International Study of Asthma and Allergies in Childhood questionnaire and underwent baseline spirometry, skin-prick testing (SPT) to dust mites, grass mix, cat, dog, cockroach and Alternaria, and measure-
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