detected between groups when LXA4 levels, ANXA1 levels, total IgE levels, and the percentage and absolute number of eosinophils were calculated ($P > .05$).

CONCLUSIONS. Serum levels of LXA4 and ANXA1, which are known to be anti-inflammatory mediators, were low in wheezy infants. Decreased synthesis may be one of the reasons for airway inflammation in these infants.

REVIEWER COMMENTS. LXA4, which is expressed on leukocytes and airway epithelial cells, blocks both airway hyperresponsiveness and pulmonary inflammation. In adult studies, it has been shown that the level of LXA4 is low in patients with severe asthma. In experimental studies, ANXA1 is associated with the development of asthma. Smokers and those with inflammatory lung conditions such as cystic fibrosis and asthma have been found to have defective ANXA1 molecules. The authors in this study found that wheezing infants had lower LXA4 and ANXA1 levels, suggesting an increased susceptibility to recurring inflammatory changes in the airways. Following LXA4 and ANXA1 levels over time may be a way to help predict which children will develop childhood asthma and allow for earlier treatment interventions.

Validation of Parental Reports of Asthma Trajectory, Burden, and Risk by Using the Pediatric Asthma Control and Communication Instrument

PURPOSE OF THE STUDY. The goal of this study was to evaluate the utility of assessing direction, bother, and risk domains within the Pediatric Asthma Control and Communication Instrument (PACCI), a validated parent-completed questionnaire assessing 5 dimensions of asthma health, as part of guideline-recommended asthma care.

STUDY POPULATION. A convenience sample of 317 children diagnosed with asthma (mean age: 8.2 years; 58% boys; 44% African American) was recruited from 2 university-based asthma specialty care clinics.

METHODS. Cross-sectional data were collected on demographic characteristics, spirometric values (1 center), and results of several parent-completed questionnaires. The Pediatric Asthma Caregiver Quality of Life Questionnaire (PACQLQ) assessed asthma-specific quality of life, and asthma control was measured by using the validated PACCI control domain. Mean asthma PACCI control, PACQLQ, and lung function values were assessed across the domains of direction (asthma improving or worsening), bother, and risk by using analysis of variance. The PACCI was further analyzed for discriminative validity by using linear regression and $\chi^2$ analyses.
RESULTS. Measures of asthma control and quality of life decreased as parent-reported PACCI direction moved from “better” to “worse.” Similar results were observed as the PACCI bother domain varied from “not bothered” to “very bothered,” although no associations were found with these domains and lung function. Any reported PACCI risk event was associated with poorer asthma control and PACQLQ scores.

CONCLUSIONS. The PACCI is a valid measure of multiple indicators of asthma morbidity, allowing for assessment of asthma control, risk, and 2 measures of quality of life (direction and bother) in 1 questionnaire. Such measures better address the asthma guideline recommendation of the National Heart, Lung, and Blood Institute that patient experiences be assessed directly rather than extrapolated from other clinical measures. Predictive implications and effect on patient care and outcomes have yet to be determined.

REVIEWER COMMENTS. This study provides evidence that subjective parent-reported measures correlate well with other known measures of asthma control and quality of life. Given the convenience of using only 1 questionnaire for all measures, the PACCI is a viable approach to ensuring multidimensional asthma care as recommended by current asthma guidelines.


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Discordance Between Aeroallergen Specific Serum IgE and Skin Testing in Children Younger than 4 Years


PURPOSE OF THE STUDY. The goal of this study was to test the yield of skin prick testing (SPT) versus allergen-specific serum IgE (sIgE) testing in identifying aeroallergen sensitization in atopic children aged <4 years.

STUDY POPULATION. The study population consisted of 40 atopic inner-city children from a pediatric asthma center in the Bronx, New York, aged <4 years who had a history of wheezing. Patients were enrolled in a randomized, prospective interventional clinical trial evaluating the efficacy of subcutaneous immunotherapy in asthma.

METHODS. Children with wheezing on >1 occasion, atopy, and having a major risk factor for developing asthma (ie, family history of eczema and/or asthma) were included in the study. The patients underwent SPT for 7 common aeroallergens, including grass pollen mix, ragweed pollen, dust mite, roach, mouse, cat, and dog. The children with both SPT and parental consent to participate in an associated clinical immunotherapy trial had sIgE levels performed by the Immulite System (Siemens AG, Munich, Germany) within 4 weeks of initial SPT testing.

RESULTS. Poor to fair agreement between the 2 methods of detecting allergic sensitization existed for all food allergens tested, except mouse, which had moderate agreement. If only SPT had been performed, 42% of the sensitizations diagnosed by using combination SPT and allergen-specific sIgE level would have been missed. In contrast, 13% of missed sensitizations were seen when allergen-specific sIgE alone was performed. Further investigation showed that at least 1 specific aeroallergen sensitization would have been missed in 80% of children who only underwent SPT. In addition, more than one-third of children in this study would have had ≥1 aeroallergen sensitization missed by undergoing allergen-specific sIgE testing alone. SPT and allergen-specific sIgE were a perfect match only in 7.5% (3 of the 40 children). Children with high total sIgE levels (≥300 kU/L) were more likely to have negative results on SPT in the face of sIgE-positive tests to the same allergen. They were also less likely to have SPT-positive results in the face of sIgE-negative test results to the same allergen.

CONCLUSIONS. The results of this study suggest that when testing for aeroallergen sensitization, both forms of testing (SPT and sIgE) should be considered to make the diagnosis in children aged <4 years with high risk for asthma.

REVIEWER COMMENTS. This study suggests that some young patients would likely benefit from both SPT and sIgE testing. One limitation to the study, however, is the sample size. This study reminds us that when results of laboratory tests do not support the clinical diagnoses we suspect, further testing may help make the proper diagnosis in some cases. Further randomized controlled studies with larger sample sizes are needed to investigate the utility of both tests in the diagnosis of young children at high risk for asthma.


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Wheeze Phenotypes in Young Children Have Different Courses During the Preschool Period


PURPOSE OF THE STUDY. The goal of this study was to evaluate whether categorizing children with early wheeze based on their trigger can help predict their disease course in the preschool years.

STUDY POPULATION. Initially, 300 children aged <3 years with a history of wheeze were enrolled. Follow-up data were available on 150 of the children at age 5 years.
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