Early Atopy Without Wheezing Doesn’t Predispose to Asthma

BY BRUCE JANCIN
Denver Bureau

KEystone, Colo. — Young children who have atopic dermatitis without recurrent wheeze can face an increased risk of developing asthma by school age.

This is a question that often is asked by worried parents who have read about the atopic march, the theory that early atopic dermatitis predisposes to a disease progression including food allergies, allergic rhinitis, and ultimately asthma. Dr. Joseph D. Spahn said at a meeting on allergy and respiratory disease. Reassurance is that this is not the case in children with atopic dermatitis without respiratory involvement. The landmark Multicentre Allergy Study (MAS), said Dr. Spahn of the medical center and the University of Colorado at Denver.

The study, funded by the German Federal Ministry of Education and Research, prospectively followed 1,314 children in five cities from birth to age 13 years. Allergic sensitization to house dust mites, cat and dog hair, and other peripheral allergens was assessed six times from ages 1-10 years.

Long function was measured at 7, 10, and 13 years. Environmental exposure to allergens was evaluated via home visits at ages 6 and 18 months and at 3, 4, and 5 years.

In MAS, the cumulative prevalence of atopic dermatitis in the first 2 years of life was 21.5%. The great majority of affected children outgrew their atopic dermatitis. Indeed, 43% of those with early atopic dermatitis were in complete remission by age 3 years. Only 18% had active atopic dermatitis at age 7.

The two predictors of continued atopic dermatitis at age 7 identified in the study were severity of the skin disease and early sensitization to allergens. Moreover, those without concomitant early wheeze were not at increased risk of asthma by age 7, compared with nonwheezers without eczema. Dr. Gilbert said.

“Recurrent wheezing illnesses affect 35%-70% of children in the first 4 years of life, yet by school age only about 10% of children have active asthma with airflow hyper-responsiveness and impaired lung function. What, he asked, distinguishes preschoolers whose wheezing is self-limited from those who will go on to develop asthma?” Dr. Spahn said.

MAS has shown there are two phenotypes of early childhood wheezers. Those without atopy typically outgrow their wheezing symptoms and have normal lung function at puberty. The majority of those who display sensitization to indoor perennial allergens on skin testing at age 3 years will go on to have active asthma at age 13—and their risk is boosted further if they also have a high level of exposure to the allergens. These are the children who need to be entered into a management program. Dr. Spahn explained at the meeting, which was sponsored by the National Jewish Medical and Research Center, Denver.

“If you’re able to do [radioallergosorbent testing] or skin testing and you only have one period of time to do it, I would say do it at age 3 because that’s the cut point,” Dr. Spahn said.

He continued. Nine of 10 young children with recurrent wheezing but no atopy on skin testing at age 3 lost their respiratory symptoms by school age and continued to have normal lung function by age 13.

In contrast, 50% of atopic wheezers had asthma by age 13. Impairment of small-airway function at age 7 years, as assessed by maximum expiratory flow at 50%, was greater in children sensitized to allergens by age 3 years than in those sensitized by age 5 and greater in those with high rather than low home exposure (Lancet 2006;368:763-70).

“The exposure assessment is what makes this study so great. They went to the homes to see whether it was just sensitization in children or sensitization plus exposure that drives the development of asthma,” Dr. Spahn observed.

MRSA Can Cause Severe Musculoskeletal Infections in Children

BY JANE SALODOF McCaNEIL
Senior Editor

Albuquerque — Community-acquired methicillin-resistant Staphylococcus aureus is causing a growing number of sudden, severe musculoskeletal infections in otherwise healthy children, according to two reports at the annual meeting of the Pediatric Orthopaedic Society of North America.

Investigators from Indiana University in Indianapolis and from Children’s Hospital of Alabama in Birmingham warned in separate posters that sepsis and other complications are common in these cases along with multiple, sometimes asymptomatic, sites of involvement.

In separate interviews, Dr. John P. Lubicky, of Indiana University, and Dr. Shawn Birmingham suggested that unfamiliarity with musculoskeletal presentation of community-acquired MRSA infections may be causing dangerous delays in diagnosis.

“The kids are sick as hell. Some nearly die,” Dr. Lubicky said, urging clinicians to raise their index of suspicion. Unless a physician has seen one of these infections before, he said, community-acquired MRSA is not likely to come to mind when children present with fever and don’t move around much.

“Several of the patients had signs of infection in a knee or ankle for a few days, and it took them a while to get appropriate treatment,” Dr. Gilbert said, calling for more aggressive treatment in these infections.

The Indiana Experience

Searching for MRSA-positive musculoskeletal infections treated from January 2003 to February 2008, Dr. Lubicky and his colleagues found 12 community-acquired cases in children who did not have an underlying disease. The average age was 7.2 years (range 0.2-17.7 years). Nine of the children were boys.

“A lot of the kids are blatantly healthy. There is no obvious source for them to get infected,” Dr. Lubicky said, emphasizing that the children in the retrospective study were difficult to track before age 7 taken into. One boy, he recalled, recently had fallen off a skateboard. Long hospital stays were the norm with an average of 20.5 days (range 4-42 days). Eleven children required surgical interventions. Complications included pyomyositis in 7 children, septic arthritis in 6 children, and osteomyelitis in 10 children (among them 3 cases that were multifocal and 2 that were fractures). Four children had septic emboli and one had pneumonia.

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Dr. Gilbert

The Alabama Experience

Dr. Gilbert and his colleagues found 156 cases of culture-proven S. aureus infections when they searched community-acquired septic arthritis or osteomyelitis cases from 2001 to 2007. Of these, 66 cases (42%) were methicillin resistant, including 8 cases of musculoskeletal infection. In comparison, only 1 child among 90 with methicillin-sensitive infection was affected at more than one site—bringing the total number of multifocal musculoskeletal S. aureus infections to 9.

The number of multifocal infections doubled from three during 2001-2004 to six during 2005-2007. The number of sites also increased from 2-5 during the early period to 2-7 (average 3.8) during the later years.

Serious complications became more common over time as well. One child had bacteremia and none had septic emboli in the early multifocal group. Among the multifocal cases after 2004, four children presented with bacteremia and all six children had septic arthritis. Dr. Gilbert said that he now routinely samples all high-risk joints, such as the hips, and any joints with obvious swelling.