

Early Atopy Without Wheezing Doesn't Predispose to Asthma

BY BRUCE JANCIN
Denver Bureau

KEYSTONE, COLO. — Young children who have atopic dermatitis without recurrent wheezing do not 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 that this is not the case in children with atopic dermatitis without respiratory symptoms comes from the landmark Multicentre Allergy Study (MAS), said Dr. Spahn of the medical center and the University of Colorado at Denver.

The MAS 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 perennial allergens was assessed six times from ages 1-10 years. Lung 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 der-

matitis. 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 wheezing were not at increased risk of asthma by age 7, compared with nonwheezers without eczema (J. Allergy Clin. Immunol. 2004;113:925-31).

"It's not that there's a progression from atopic dermatitis to asthma, which the atopic march would have us believe, but that there are two distinct phenotypes of eczema early in life: eczema by itself, and eczema plus recurrent wheezing. The two have to be together early in life—atopic dermatitis and wheezing—for atopic dermatitis to have a bad outcome," Dr. Spahn 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 airway hyperresponsiveness and impaired lung function. What, he asked, distinguishes preschoolers whose wheezing is self-limited from those who will go on to develop asthma?

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 aeroallergens 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 on a controller medication, 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. If you're negative at 3, chances are you're going to outgrow this thing, and if you're positive at 3, chances are you're not," he continued.

Nine of every ten 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, 56% 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. ■

'DVD Anesthesia' Helpful During Skin Procedures

WAIKOLOA, HAWAII — "DVD anesthesia" is an effective distraction technique when performing biopsies, excisions, and other office dermatologic procedures in children, Dr. Elizabeth Alvarez Connelly said.

The concept is straightforward: provide the child with a portable DVD player or handheld electronic game as a distraction from the time the procedure site is covered with topical lidocaine cream under occlusion through the procedure itself, said Dr. Connelly of the University of Miami.

Successful execution requires staff patience along with adherence to a few rules, she noted. Provided the parent is not overly anxious, he or she can remain at the child's side, but must stay seated. If the child is too young for an electronic device, consider having the parent sing a favorite song or talk to the child, she said at the annual Hawaii dermatology seminar sponsored by Skin Disease Education Foundation. "I do insist that the parents sit. I've had one that fainted, and it made things much more difficult," she recalled.

After at least a half an hour of lidocaine cream under occlusion, Dr. Connelly shows the child her fingers and explains that she is going to firmly pinch the skin around the injection site to stimulate the feeling of the local anesthesia. She reassures the child that the injection will not be felt because of the "magic cream." Dr. Connelly carefully avoids showing the child the needle, the scalpel or other instruments, and any bloody gauze.

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—Bruce Jancin

MRSA Can Cause Severe Musculoskeletal Infections in Children

BY JANE SALODOF MACNEIL
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 comorbidities 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 R. Gilbert of the University of Alabama at 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 when these infections present.

The Indiana Experience

Searching for MRSA-positive musculoskeletal infections treated from January 2003 to February 2008, Dr. Lubicky and his coauthors 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 had been active before taking sick. 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,

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DR. GILBERT

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.

Dr. Lubicky and his colleagues recommended magnetic resonance imaging of the whole body, if possible, to check for multiple remote sites when community-acquired MRSA is suspected. Treatment of ten involves medical and surgical interventions, they said, warning that abscesses should be drained early and may need to be drained repeatedly.

The investigators said to start empiric antibiotic treatment against both methicillin-susceptible and methicillin-resistant bacterial strains. A 6-week course of treatment, starting with parenteral administration and followed by oral antibiotics against susceptible isolates, is usually adequate, they said. Eight children in the ret-

rospective study were treated with vancomycin and clindamycin.

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 multifocal 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 2-3 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 emboli. Dr. Gilbert said that he now routinely samples all high-risk joints, such as the hips, and any joints with obvious swelling. ■

