Methicillin-Resistant *Staphylococcus aureus* Colonization in Children With Atopic Dermatitis


**PURPOSE OF THE STUDY.** To determine the prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) in children with atopic dermatitis (AD).

**STUDY POPULATION.** Observational cross-sectional study of 54 children seen in the dermatology clinic at the Children’s Hospital of Philadelphia in October and November 2004.

**METHODS.** Eczema severity was determined with the Eczema Area and Severity Index. Culture swabs (BBL CultureSwab [Becton, Dickinson, Sparks, MD]) were used. All cultures were plated for up to 5 days for the growth of *S aureus*, and methicillin-sensitivity tests were performed on positive *S aureus* cultures. Patients’ families provided information on medical histories, medication use, and other identifying risk factors for health care–associated MRSA, by completing a detailed, self-administered questionnaire.

**RESULTS.** Eighty percent of the patients (43 of 54 patients) were colonized with *S aureus*, and 16% (7 of 54 patients) were colonized with MRSA. MRSA was associated with previous hospitalization, with an odds ratio of 26.2 (95% confidence interval: 2.1–316.0), and the combination use of calcineurin inhibitors and topical corticosteroids. Other risk factors for MRSA (health care worker in household, oral antibiotic therapy, previous skin infections, and history of previous MRSA) were not identified. Eczema severity, defined by Eczema Area and Severity Index score, was not a risk factor for *S aureus* or MRSA.

**CONCLUSIONS.** AD patients have a high rate of *S aureus* colonization and MRSA (16%) colonization, compared with the general public (1%–3%).

**REVIEWER COMMENTS.** The prevalence of MRSA was low in the study of patients with AD, which suggests that standard *S aureus* antibiotics can be used for first-line therapy. The possibility of local variation of MRSA colonization is important to consider before using oral cephalosporin treatment. Eczema severity might be a risk factor for MRSA, because the use of combination therapy or previous hospitalization as a marker for severe disease is associated with MRSA colonization.

Treatment of *Staphylococcus aureus* Colonization in Atopic Dermatitis Decreases Disease Severity

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**PURPOSE OF THE STUDY.** To determine the rate of methicillin-resistant *Staphylococcus aureus* (MRSA) colonization in children with moderate-to-severe atopic dermatitis (AD) and to investigate the use of bleach baths and intranasal mupirocin treatment in management.

**STUDY POPULATION.** Patients (*N* = 31) 6 months to 17 years of age with moderate-to-severe AD and signs of bacterial skin infection were recruited from a dermatology clinic in Children’s Memorial Hospital (Chicago, IL).

**METHODS.** This was a randomized, investigator-blinded, placebo-controlled study. All patients were initially treated with cephalexin for 14 days and were then assigned randomly to receive intranasal mupirocin ointment (versus petrolatum placebo) twice daily for 5 days per month and to use one half cup of bleach (versus placebo water) in 40 gallons of bathwater for soaking for 5 to 10 minutes twice weekly. Treatment was undertaken for 3 months. The primary outcome measure was the Eczema Area and Severity Index score.

**RESULTS.** *S aureus* was cultured from 81% of the nares and 87% of lesional skin samples, and the prevalence of MRSA was 4% of nasal cultures and 7.4% of skin cultures. Treated subjects, compared with control subjects, showed significantly greater mean reductions from baseline in Eczema Area and Severity Index scores at the 1-month and 3-month visits (*P* = .004). The improvement was attributable to score changes for body areas that had been submerged in the dilute bleach baths (score change at 3 months: treated: −4.9; placebo: −0.9; *P* = .0005).

**CONCLUSIONS.** The authors concluded that chronic use of dilute bleach baths with intermittent intranasal application of mupirocin ointment decreased the clinical severity of AD in patients with clinical signs of secondary bacterial infections and that these patients did not have increased susceptibility to MRSA.

**REVIEWER COMMENTS.** Noting the significant role of *S aureus* in the etiology of AD (as reviewed above), the use of bleach baths has been recommended for many years; however, study of the approach has been lacking. Clinicians must recognize that the approach here was targeted to a specific population (moderate-to-severe AD with superinfection) and more than just bleach baths were used (initial cephalexin treatment and also mupirocin and emollient/antiinflammatory drug therapies). While we await additional studies on the efficacy and safety (including promotion of resistance) of the studied ap-
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Jonathan M. Spergel

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