

# Malnutrition May Manifest as Acrodermatitis

BY HEIDI SPLETE  
Senior Writer

GRAND CAYMAN, CAYMAN ISLANDS — Consider the possibility of acquired zinc deficiency in patients with persistent red, scaly skin on the hands and feet, Dr. Christopher O'Connell proposed at the Caribbean Dermatology Symposium.

Dr. O'Connell, a dermatology resident at St. Luke's-Roosevelt Hospital Center in New York, described the case of a 49-year-old black woman who presented with severe erythema, edema, and scaling on her palms and soles, as well as scaly patches and fissures on the backs of her hands. In addition, she had edema and erythema on her lower legs, as well as nonblanchable brown and red patches on her upper thighs. At follow-up exams, some of the nonblanchable patches had become scaly, and some of the scaly patches had progressed to form bullae and erosions.

The patient's medical history included type 2 diabetes, end-stage renal disease, hypertension, and alcohol abuse. She had completed a 2-week course of vancomycin and gentamycin for *Staphylococcus aureus* bacteremia one week prior to her evaluation in the dermatology department.

"This patient's alcohol abuse and renal disease were the likely causes of her acquired zinc deficiency and consequent acrodermatitis," Dr. O'Connell said.

The initial laboratory tests revealed chronic anemia. All other blood work was normal, and blood cultures were negative. The initial differential diagnosis included staphylococcal scalded skin syndrome, a drug reaction, and vasculitis.

"A skin biopsy was performed and the histopathology was consistent with nutritional deficiency," he said. Histologic findings that supported the final diagnosis included compact parakeratosis, pallor of the upper epidermis, hypogranulosis, intraepidermal

vesiculation, keratinocyte necrosis, and architectural disarray.

Based in part on the histology findings, the differential diagnosis was expanded to include necrolytic migratory erythema, pellagra, and zinc deficiency.

Necrolytic migratory erythema was unlikely because the patient's glucose levels were well controlled on low-dose insulin glargine and a CT scan of the abdomen showed no signs of pancreatic neoplasm. Pellagra was ruled out because the rash was not photodistributed.

On further testing, the patient's zinc level was 615 mcg/L, compared with the normal, healthy range of 670-1,240 mcg/L. The diagnosis of zinc deficiency was confirmed when the patient's skin improved after zinc supplementation. The patient died, however, of complications from her renal disease.

"The skin contains 6% of the body's supply of zinc and it is the most common organ to demonstrate clinical signs of zinc defi-



The presentation of acquired zinc deficiency included non-blanchable brown and red patches on the upper thighs.

COURTESY DR. CHRISTOPHER O'CONNELL

ciency," Dr. O'Connell noted.

Acquired zinc deficiency has been reported in association with many medical disorders, including alcoholism, renal disease, gastrointestinal malabsorption syndromes, food allergies, anorexia, and severe burns. Research has shown that more than 300 enzymes require zinc in order to function. Zinc is essential for pro-

tein, carbohydrate, and fat metabolism, as well as for healthy immune system function, cell growth, and wound healing.

Hereditary zinc deficiency presents with a clinical picture similar to acquired zinc deficiency; however, it is an autosomal recessive disorder that usually presents within the first 4-10 weeks of life, he said. ■

## New Formulations of Existing Acne Medications Show Promise

BY DAMIAN McNAMARA  
Miami Bureau

MIAMI BEACH — The latest trend in acne treatment is not new medications but innovative reformulations of existing agents, Dr. Dirk M. Elston said at a symposium sponsored by the Florida Society of Dermatology and Dermatologic Surgery.

Subantimicrobial-dose doxycycline (Oracea, CollaGenex Pharmaceuticals Inc.) and extended-release minocycline (Solodyn, Medcis Pharmaceutical Corp.) are good examples, he said.

The use of 40 mg of doxycycline for acne would be off label. The Food and Drug Administration approved the agent in May 2006 for the treatment of inflammatory rosacea lesions in adults. The efficacy studies that led to the rosacea indication, however, are a "proof of concept that you can separate its anti-inflammatory effect from its antimicrobial effect," said Dr. Elston, director of the department of dermatology at Geisinger Health System, Danville, Pa.

Oral antibiotics used to treat acne vulgaris feature both antimicrobial and anti-inflammatory properties (JAMA 2004;292:726-35). A reduction in the emergence of doxycycline resistance is a potential benefit of staying below an effective antimicrobial dose, said Dr. Elston, who is on the advisory boards for both Medcis and CollaGenex.

Clinical concerns with doxycycline include esophageal injury and patient compliance. When physicians at Geisinger

prescribe the drug, the electronic record system automatically prints out patient instructions to take the antibiotic with ample water or a meal. There is also a reminder never to take doxycycline at bedtime.

The FDA approved minocycline extended-release tablets, also in May 2006, for the treatment of inflammatory lesions of nonnodular moderate to severe acne vulgaris in patients aged 12 years and older. Extended-release minocycline features a reduced total dosage (1 mg/kg per day) with efficacy equal to higher doses, Dr. Elston said. It is available as a 45-mg, 90-mg, or 135-mg tablet. The once-a-day formulation increases compliance.

Minocycline is much less resistant to isolates of *Propionibacterium acnes* than is tetracycline or erythromycin, Dr. Elston said.

Adverse events in a phase III trial were similar between 674 patients taking extended-release minocycline and 364 taking a placebo. Headache, nausea, and fatigue were the leading events reported.

Interim results for 345 participants in an ongoing, open-label, long-term safety study show no increase in the number of antinuclear antibody-positive patients, a concern related to lupus. In addition, "there is no evidence of any interaction with birth control drugs," Dr. Elston said.

In an open-label study with 30 patients, extended-release minocycline did not alter plasma estradiol, FSH, LH, or progesterone hormone levels. ■

## Ethnicity Could Affect Patients' Response to Acne Treatment

BY DENISE NAPOLI  
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WASHINGTON — Asian patients treated with 0.1% adapalene gel showed significantly greater clearance of acne than did white and black acne patients after 6 weeks, Dr. Fran E. Cook-Bolden reported in a poster at the annual meeting of the American Academy of Dermatology.

The open-label, multicenter, observational phase IV trial also showed significant improvement among Hispanic patients with acne, compared with their white counterparts, reported Dr. Cook-Bolden, of the Skin Specialty Group in New York.

"With the changing demographics of the U.S. population, there is a need to understand the variety of dermatologic disorders that affect patients with nonwhite skin types," Dr. Cook-Bolden and her associates wrote. "Patients with darker pigmentation are at a greater risk from developing postinflammatory hyperpigmentation both from their acne lesions [and] also potentially from their treatment—particularly when the treatment causes irritation."

Patients aged 12-72 years old were grouped by race into the following categories: Asian (78 patients), black (169 patients), Hispanic (222 patients), white (1,215 patients), and American Indian/Alaskan Native/Pacific Islander/other (36 patients).

Acne severity was rated moderate to moderately severe.

The investigators used a global assessment scale on which a score of 0 was equivalent to complete clearing and a score of 6 meant that the acne was actually worse after treatment.

By week 12, all racial groups had shown at least some improvement, compared with baseline.

At week 6, significantly more Asian patients (44%) achieved successful treatment (defined as a score of 0-2), compared with black patients (34%) and white patients (29%). At week 12, the difference was significant only between Asian and white patients, 71% and 56%, respectively.

Hispanics showed greater reduction in inflammatory lesions, compared with whites at week 12 (75% vs. 67%).

Though the finding was not statistically significant, a greater proportion of black patients than whites showed success at week 6 (56% vs. 51%, respectively) and 12 (80% vs. 66.7%, respectively).

All patients tolerated the treatment—which included a once-daily application of adapalene gel 0.1% plus any other treatments deemed appropriate by their dermatologists—with minimal incidence of erythema, peeling, scaling, dryness, stinging and/or burning.

The study and poster were supported by Galderma Laboratories L.P. ■

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