Filaggrin Mutations Linked to Greater Skin Barrier Dysfunction in Atopy

BY BRUCE JANCIN

BUDAPEST, HUNGARY—Mild atopic dermatitis in patients with filaggrin mutations was associated with significantly greater skin barrier dysfunction than in patients with comparable wild-type atopic dermatitis in a comparative laboratory study.

This more pronounced epidermal barrier defect and skin permeability should allow greater penetration of antigens—which then draw an immune response resulting in contact sensitization and irritancy reactions—as well as predisposition to other atopic diseases such as hay fever and asthma, Dr. Sharizan Abdul-Ghaffar said at the annual meeting of the European Society for Dermatological Research.

This hypothesized chain of events was supported by the findings in the lab study of 13 patients with filaggrin-related atopic dermatitis (AD) and 45 controls with similarly mild AD without filaggrin mutations, according to Dr. Abdul-Ghaffar of the University of Edinburgh (Scotland). The subjects with filaggrin-related AD displayed significantly greater baseline transpidermal water loss on uninvolved flexor forearm skin than did controls. Moreover, the number of tape strips required to mechanically break the skin barrier, as signaled by achieving transepidermal water loss on uninvolved flexor forearm skin, was significantly less in the AD group. Also, the number of lamellar strips required to mechanically break the skin barrier was significantly greater in the AD group.

In patch testing using the European Standard Series, 3 of 4 persons with filaggrin-related AD developed more than five positive reactions, compared with just 1 of 25 (4%) controls, but the prevalence of asthma in the two groups was similar.

In clinic testing using the European Standard Series, 3 of 7 (43%) subjects with filaggrin-related AD developed more than five positive reactions, compared with just 1 of 25 (4%) controls with wild-type AD.

“Of all these results of certain support an underlying barrier defect in the pathogenesis of filaggrin-related eczema,” concluded Dr. Abdul-Ghaffar. Several audience members said that they would have expected to see even bigger differences in the test results between AD patients with and without filaggrin mutations.

Dr. Abdul-Ghaffar said the explanation may reside in the selection bias deliberately introduced in the study. Filaggrin-related AD is often at the more severe end of the disease spectrum, but to be eligible for this study patients had to have mild AD.

Consider Ladder Approach To Treating Atopy in Kids

BY DAMIAN McNAMARA

SAN FRANCISCO—Start simple and use a step-wise approach to treat children with atopic dermatitis, Dr. Sheila Fal-lon Friedlander recommended.

“Atopic dermatitis matters so much because it can become infected, can impair physical and psychologic function, and has a tremendous effect on family quality of life,” Dr. Friedlander said at a seminar on women’s and pediatric dermatology sponsored by Skin Disease Education Foundation.

Using a ladder analogy, start at the bottom with repair of the skin barrier. The next rung is an intervention to short circuit inflammation. Then take care of itching, treat infections, address triggers, and educate patients and their family.

“But is the family compliant? “This is extremely important. You need to get family to buy in to a treatment plan that is often complicated,” said Dr. Friedlander of the University of California, San Diego.

Consider the age of the child for duration of disease, and how much body surface area is affected. Bathing can be beneficial to atopic skin if it hydrates the stratum corneum and removes dirt, scales, and bugs, but breaks in the skin can occur during evaporation, so bathing and moisturizers together are better than either alone, Dr. Friedlander said.

“If the repair does not work, the next step of the ladder is short circuiting inflammation. With corticosteroids for atopic dermatitis, use the weakest strength to do the job, blast and taper off, or consider weekend pulses of high potency steroids.

“Topical calcineurin inhibitors are another therapeutic option. ’There are a lot of data out there, so we know a lot about them,” she said.

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