Which Comes First: Atopic Dermatitis or ADHD?

BY BRUCE JANCIN

BERLIN — Atopic dermatitis is strongly and independently associated with attention-deficit/hyperactivity disorder, three large German studies suggest.

If the relationship is causal—and that's an unsettled issue—then atopic dermatitis would explain roughly 10% of all cases of ADHD, Dr. Jochen Schmitt estimated at the annual congress of the European Academy of Dermatology and Venereology.

Atopic dermatitis is the most common chronic inflammatory disorder in childhood, and ADHD is the most common psychiatric diagnosis. The nature of the relationship is a classic chicken-versus-egg question.

"As dermatologists, we first think that eczema causes sleeping problems, and this then would maybe cause ADHD. But a close friend of mine who is a psychiatrist says, no, ADHD causes psychologic distress and this distress is an exacerbating factor for eczema," explained Dr. Schmitt of Carl Gustav Carus Technical University in Dresden, Germany.

"It's also possible that this is a syndrome: that eczema, ADHD, and sleeping problems are parts of one syndrome with another third or fourth underlying cause. And it's even possible that all these things are true: that eczema triggers ADHD and vice versa and that sleeping problems could play a crucial role," the dermatologist continued.

Dr. Schmitt first became interested in the relationship between atopic dermatitis and ADHD after learning of a Dutch group's hypothesis that some cases of ADHD are an allergic hypersensitivity disorder (Pediatr. Allergy Immunol. 2009;20:107-12).

Dr. Schmitt and his coinvestigators turned to a database on the outpatient care of 600,000 residents of Saxony. They identified 1,436 subjects aged 6-17 years with atopic dermatitis and randomly selected an equal number of age- and gender-matched controls. In a multivariate logistic regression analysis, the investigators showed that a diagnosis of atopic dermatitis was independently associated with a 1.47-fold increased likelihood of prevalent ADHD (JAMA 2009;301:724-6).

Next came a second cross-sectional study, this one involving KIGGS, a population-based nationwide German survey including 13,318 youths aged 3-17 years, of whom 1,952 had atopic dermatitis and 653 had ADHD. After adjustment for potential confounders, including parental smoking, breastfeeding, perinatal health problems, and atopic comorbidity, individuals with atopic dermatitis were 1.54-fold more likely to carry a diagnosis of ADHD than those without atopic dermatitis.

Atopic dermatitis was associated with a 1.47-fold increased likelihood of prevalent ADHD in one study.

DR. SCHMITT

Among the 6,484 children aged 3-11 years, Dr. Schmitt and colleagues found that those with atopic dermatitis and sleep problems had a highly significant 2.67-fold increased likelihood of ADHD compared with children without atopic dermatitis. But atopic dermatitis patients without sleep problems did not have a significantly increased rate of ADHD (J. Epidemiol. Community Health 2009 [doi:10.1136/jech.2009.093534]).

To move beyond the limitations imposed by cross-sectional data, Dr. Schmitt and his coworkers have most recently turned to the German Infant Nutritional Intervention Study (GINI-Plus), a 3,000-subject multicenter prospective investigation into environmental and genetic influences on the development of allergies.

In an as-yet-unpublished analysis of GINI-Plus data, the investigators found that physician-diagnosed atopic dermatitis during infancy was an independent risk factor for mental health problems at age 10 years.

Dr. Schmitt disclosed having no financial conflicts of interest. The GINI-Plus study is funded by the German Federal Ministry of Education and Research. ■