The burden of atopic dermatitis in US adults: Health care resource utilization data from the 2013 National Health and Wellness Survey

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Background: There is a lack of data on the burden of atopic dermatitis (AD) in adults relative to the general population.

Objective: To characterize the AD burden in adult patients relative to both matched non-AD controls and matched patients with psoriasis in terms of comorbidities, health care resource utilization (HCRU), and costs.

Methods: Adults (≥18 years) who self-reported a diagnosis of AD or psoriasis and adult non-AD controls were identified from the 2013 US National Health and Wellness Survey. Patients with AD were propensity score–matched with non-AD controls and patients with psoriasis on demographic variables. Patient-reported outcomes were analyzed between matched cohorts.

Results: Patients with AD had a significantly greater risk for atopic comorbidities, as well as significantly greater HCRU and total cost compared with non-AD controls. The burden of AD was generally comparable to that of psoriasis, although patients with AD reported increased use of emergency room visits compared with patients with psoriasis.

Limitations: Patient-reported data are susceptible to recall bias and erroneous classification.

Conclusions: Adult patients with AD reported a substantial disease burden, suggesting an unmet need for more effective AD treatment options. (J Am Acad Dermatol http://dx.doi.org/10.1016/j.jaad.2017.08.002.)

Key words: Atopic dermatitis; burden of disease; comorbidities; disease severity; health care resource utilization; patient-reported outcomes.
Atopic dermatitis (AD) is a chronic relapsing, inflammatory skin disease characterized by pruritus, xerosis, and eczematosus lesions and with features including erythema, infiltration/papulation, excoriation, and lichenification. Although AD most often starts in early infancy or childhood, a recent study reported that childhood AD extended into adult life in approximately half of the cases studied. For many patients, moderate/severe AD is a chronic, lifelong condition that is underrecognized as a major public health concern. Recent publications have documented the multidimensional disease burden in patients with moderate/severe AD, encompassing increased levels of itch, pain, sleep disturbance, anxiety and depression, and impaired health-related quality of life. In addition to the disease burden, AD is associated with a substantial economic burden. Costs incurred by patients, their families, and payers include physician visits, emergency room (ER) visits, hospitalizations, prescriptions, and over-the-counter treatments. However, comprehensive data on the disease and economic burden of AD relative to the general adult population and other chronic skin disorders are limited. To this end, the aim of the present study was to evaluate the real-world patient burden, in terms of comorbidities, health care resource utilization (HCRU), and costs compared with non-AD controls.

### METHODS

#### Data source

Patient-level data were obtained from the 2013 US NHWS, an Internet-based general population survey. The NHWS uses a random stratified sampling framework (sex, age, and race/ethnicity) to ensure that it is representative of the demographic composition of the US adult population, based on data from the US Bureau of the Census. A total of 1,183,287 individuals were asked to complete the 2013 NHWS, 109,592 of whom (9.3%) responded. Of the responders, 75,000 (68.4%) met the inclusion criterion (age ≥18 years), completed the survey, and gave informed consent for their anonymized data to be used for research purposes. The NHWS was approved by the Essex Institutional Review Board (Lebanon, NJ).

#### Patient population

The AD cohort comprised adult respondents who indicated that they had experienced AD in response to the question: “Which of the following conditions have you experienced in the past 12 months?” Possible response options were to select all conditions that applied, select “I have not experienced any of the above conditions in the past 12 months,” and select “I decline to answer.” In addition, respondents had to answer yes to the question “Has your AD been diagnosed by a physician?” The non-AD control cohort comprised adult respondents who did not report experiencing AD, dermatitis, or eczema in the past 12 months. The psoriasis cohort comprised adult respondents who indicated that they had experienced psoriasis in response to the question: “Which of the following conditions have you ever experienced?” Possible response options were to select all conditions that applied, select “I do not have any of the above conditions,” and select “I decline to answer.” In addition, respondents had to answer yes to the question “Has your psoriasis been diagnosed by a physician?” Respondents who reported a diagnosis of both AD and psoriasis were excluded from this analysis.

Adults with AD graded their disease severity (mild, moderate, or severe) in response to the question “How severe is your dermatitis/eczema?” Adults with psoriasis graded their disease severity in response to the question “According to the National Psoriasis Foundation, the palm of the hand equals 1% of the skin. Thinking about this, please estimate the percent of your body surface your psoriasis currently affects as follows: mild (<3% body coverage); moderate (3%-10% body coverage); or severe (>10% body coverage).”

#### Propensity score matching

To correct for potential confounding, the AD cohort was propensity score–matched to non-AD
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