Incidence of Atopic Dermatitis and Eczema by Ethnic Group Seen Within a General Pediatric Practice

By Robert B. Baker, MD, FAAP

Background: Genetics is believed to be a factor in the pathogenesis of atopic dermatitis and eczema. Few reports have described the prevalence of atopic dermatitis and eczema by ethnic group.

Objective: Our objective was to explore, by ethnicity, the prevalence of atopic dermatitis and eczema within a large, general pediatric practice.

Methods: From a database of all patients entering the practice, were diagnoses determined according to standard published criteria. Diagnoses were retrospectively reviewed for all patients whose ethnicity was recorded in the database.

Results: Prevalence of atopic dermatitis was 3.2% in the overall practice population. This varied as follows: 3.7% among blacks, 8.5% among Filipinos, 2.0% among Hispanics, 2.8% among whites (not Hispanic), 3.2% among mixed races, and 5.6% among other Asians. The Filipinos had a higher prevalence of atopic dermatitis and eczema (p<0.01 vs. all others).

Discussion

Prevalence of these diseases by ethnic group showed marked variation, ranging from a high of 8.5% (in Filipino patients) to a low of 2.0% (in Hispanic patients, of all skin disorders in children aged <5 years are diagnosed as eczema."

A computerized database using Filemaker Pro (Claris Corporation, Santa Clara, California) is maintained to track patients seen within the practice. We retrospectively reviewed the records in this database for the keywords “atopic dermatitis” and “eczema.” All patients had been seen by a single observer (the author), a general pediatrician.

Definitions

All diagnoses of eczema and atopic dermatitis were made using the definitions suggested by Sweet and Sampson.

As defined by Sweet, eczema is “an irritating papular eruption, focal or diffuse, which may become exudative, crusted, scaly, or lichenified and which may be expected at some stage to show spongiosis with superficial vasodilatation and lymphocytic infiltration, no matter where on the body it occurs or what may have contributed to its cause.” As defined by Sampson’s three major criteria for atopic dermatitis: family history of atopic disease; typical facial or extensor eczematous or lichenified dermatitis; and evidence of pruritus. These patients also met Sampson’s three minor criteria for atopic dermatitis: of postauricular fissures; chronic scaling of the scalp; and xerosis, ichthyosis, or hyperlinear palms.

The observer consistently applied Sweet’s and Sampson’s criteria to all patients treated during the enrollment period, 1996-98.

Statistical Analysis

A chi-squared test was used to calculate a p value of <0.01 for the hypothesis that the Filipino population had a higher prevalence of atopic dermatitis and eczema than all others.

Materials and Methods

The Kaiser Permanente (KP) pediatric practice chosen for the study is located in a suburban area of San Diego and serves a predominantly middle-income population. Approximately 45% of the community is Hispanic (predominantly Mexican), 27% is white (not of Hispanic origin), 10% Filipino, 13% black; other ethnic designations represent 5% of the community.

References

Table 1. Sampson’s criteria for atopic dermatitis.

<table>
<thead>
<tr>
<th>Major Criteria</th>
<th>Minor Criteria</th>
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</thead>
<tbody>
<tr>
<td>Family history of eczema</td>
<td>Pruritus</td>
</tr>
<tr>
<td>Typical facial or extensor eczematous or lichenified dermatitis</td>
<td>Postauricular fissures</td>
</tr>
</tbody>
</table>

Table 2. Prevalence of atopic dermatitis by ethnicity in a pediatric practice

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>No. patients affected</th>
<th>Total no. patients</th>
<th>Percentage of patients affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>28</td>
<td>767</td>
<td>3.65</td>
</tr>
<tr>
<td>Filipino</td>
<td>48</td>
<td>562</td>
<td>8.54</td>
</tr>
<tr>
<td>Hispanic</td>
<td>53</td>
<td>2643</td>
<td>2.01</td>
</tr>
<tr>
<td>White (not of Hispanic origin)</td>
<td>45</td>
<td>1597</td>
<td>2.82</td>
</tr>
<tr>
<td>Mixed</td>
<td>8</td>
<td>253</td>
<td>3.16</td>
</tr>
<tr>
<td>Other Asian</td>
<td>5</td>
<td>90</td>
<td>5.56</td>
</tr>
<tr>
<td>All</td>
<td>187</td>
<td>5912</td>
<td>3.16</td>
</tr>
</tbody>
</table>

predominantly of Mexican origin). Ethnic differences have been described by British authors, and Williams et al described a prevalence of 16.3% in black children of Caribbean origin and 8.7% in white (not of Hispanic origin) children. Palacios et al postulated polygenic inheritance, and also cited a 13.6% prevalence in white (not of Hispanic origin) and a 10.5% prevalence in black patients attending a dermatology and allergy clinic. Discussions between this author (R.B.B.) and US Navy physicians who served in the Philippines support our observation that a high prevalence of atopic dermatitis and eczema is commonly seen in the Philippines.

The data are possibly flawed inasmuch as all ages are grouped into one data set. Atopic dermatitis is known to have a peak incidence in early infancy and then to abate in children younger than 5 years. The data probably underrepresent the prevalence in that age group because patients aged up to 18 years may enter the practice.

Because this study was conducted by only one physician in a limited geographic area, we cannot assume that the population studied typically represents the overall Filipino population in the United States or in the Philippines; the actual prevalence of atopic dermatitis and eczema probably varies considerably by geographic area. Moreover, the population served by our pediatric clinic is not ethnically representative of the overall US population. In particular, although we observed a higher prevalence of eczema and atopic dermatitis among patients of “other Asian” origin, this group included too many subsets for separate analysis (ie, Japanese, Korean, Chinese, Laotian, Vietnamese, Cambodian, and other ethnic groups were included).

In advising their patients, physicians serving populations known to be at high risk for atopic dermatitis and eczema should find the information presented here useful.

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References