The Patient-Reported Disease Burden in Pediatric Patients with Atopic Dermatitis (AD): A Cross-Sectional Study in the United States (US), Canada, Europe, and Japan

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BACKGROUND

- Atopic dermatitis (AD) is a common inflammatory skin disease characterized by eczematous lesions, intense itch, and a chronic or relapsing disease course.
- AD negatively affects sleep, health-related quality of life (HRQoL), and overall health.1
- AD affects all age groups, although pediatric and adult AD may differ in terms of risk factors and clinical presentation, which is of importance for the impact of symptoms on the daily lives of children and their families.2,3
- AD typically manifests in early childhood between 2 months and 2 years of age.
- Few multinational studies have previously published on the self-reported disease burden in children with AD.

OBJECTIVE

- This study aimed to assess the disease burden in children with AD aged 6–11 years, stratified by disease severity in the United States (US), Canada, Europe (France, Germany, Italy, Spain), and the United Kingdom (UK), and Japan.

METHODS

- This was a cross-sectional, web-based, self-report survey of children (aged 6–11 years) with AD conducted in the US, Canada, Europe, and Japan.
- The study was conducted in accordance with the European Pharmaceutical Market Research Association, Marketing Research Association, the British Healthcare Business Intelligence Association, and additional local country codes of conduct, as well as data protection legislation.
- Data were collected from September 26, 2018, to February 20, 2019.
- In each country, members of online panels (LightSpeed Health, all countries; Research Now/SSI, all countries; Toluna, all countries except Japan; AIP, Japan) who met the inclusion criteria (parents/guardians of children aged 6–11 years) received an e-mail invitation to participate in the survey. The list did not mention skin disease or AD.
- Members of online panels were recruited through broad-reach portals, and agreed to country-specific terms and conditions and privacy policies.
- All parents/guardians provided informed consent prior to participation.
- The presence of diagnosed AD in the respondents was determined by means of the International Study of Asthma and Allergies in Childhood (ISAAC) criteria and through self-reported physician diagnosis of eczema (Figure 1).
- Patients with AD were stratified by disease severity (mild, moderate, or severe) in the past 4 weeks.

RESULTS

- A total of 1681 children with AD were surveyed across the US, Canada, Europe, and Japan, stratified by disease severity (mild AD, n=1112; moderate AD, n=506; severe AD, n=63).
- Parents of children with AD reported to all survey questions for 70.2–94.1% of survey responses across the US, Canada, Europe, and Japan, whereas children reported to HRQoL-related questions for 15.9–39.8% of survey responses.
- Baseline demographics for respondents with diagnosed AD were similar across disease severity levels. At the time of the survey, patients diagnosed AD had a mean (SD) age of approximately 9.0 (1.7) years, and males and females were generally equally distributed (Table 1).
- Mean scores of itch (Figure 2), sleep disturbance (Figure 4), HRQoL (Figure 5), and severe AD had a mean (SD) age of approximately 9.0 (1.7) years, and males and females were generally equally distributed (Table 1).
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- Overall, atopic comorbidities were reported more frequently among children with severe AD, with fever and asthma being the most common (Table 2).

LIMITATIONS

- Potential misclassification and recall bias, as outcomes were based on self-report by parents/guardians (in children in some cases).
- Selection bias due to method of data collection (ie, online survey) and potential differences between individuals who agreed to participate and those who did not.

CONCLUSIONS

- This self-report, cross-sectional, real-world study on the burden of AD in children aged 6–11 years demonstrated a substantial and multidimensional impact of AD, including itch, sleep disturbance, skin pain, and HRQoL impact, as well as comorbidities and productivity losses; the results were generally consistent across countries.
- The burden associated with AD was remarkable and increased with increasing disease severity.
- The high disease burden observed in children aged 6–11 years implies that there is a major unmet therapeutic need in the management of children with moderate-to-severe AD.

Table 1. Baseline demographics of children with AD in the US, Canada, Europe, and Japan

<table>
<thead>
<tr>
<th>Country</th>
<th>Mild AD</th>
<th>Moderate AD</th>
<th>Severe AD</th>
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<tbody>
<tr>
<td>US</td>
<td>1112</td>
<td>506</td>
<td>63</td>
</tr>
<tr>
<td>Canada</td>
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</tr>
<tr>
<td>Japan</td>
<td>25</td>
<td>11</td>
<td>3</td>
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Figure 1. Self-reported assessment for the presence of AD

Figure 2. Worst itch NRS mean scores (in the past 24 h) reported by children with AD in the US, Canada, Europe, and Japan, by disease severity

Figure 3. Sleep disturbance NRS mean scores (in the past 24 h) reported by children with AD in the US, Canada, Europe, and Japan, by disease severity

Figure 4. Worst skin pain NRS mean scores (in the past 24 h) reported by children with AD in the US, Canada, Europe, and Japan, by disease severity

Figure 5. HRQoL in the past week assessed by CQD/QoL mean score for children with AD in the US, Canada, Europe, and Japan, by disease severity

Figure 6. Total number of missed school days during past 4 weeks for children with AD in the US, Canada, Europe, and Japan, by disease severity