Clinical profile of adult and paediatric patients with chronic inducible urticaria: a real-world study in the United States

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Background
- Chronic inducible urticaria (CIndU), which manifests with itchy hives and/or angioedema induced by various external, identifiable triggers, needs to be understood further
- Objective
- The objective of this study was to evaluate the demographic and clinical characteristics of adult and paediatric patients diagnosed with CIndU amongst the US population

Methods
- The target population was identified in the Optum Electronic Health Record (EHR) based on ≥ 1 ICD-9 and/or ICD-10 codes of CIndU without angioedema ≥ 6 weeks apart during the study identification period (01-Jan-2012 and 31-Dec-2018) with data available for 12 months pre- and post-index date
- Elixhauser comorbidity index (ECI) was calculated based on 31 pre-specified comorbidities, ECI are stratified into groups (0, 0–1, 1–2, 2–3, 3–5, with higher scores indicating higher burden
- Duration of disease is the time between the index date and the first chronic urticaria (CU)-related diagnosis or prescription fill for a CU-related medication during the study period
- Descriptive analysis was conducted for adults and paediatrics, separately

Table 1. Characteristics of the study cohort

<table>
<thead>
<tr>
<th></th>
<th>Adults No. 5,099</th>
<th>Paediatrics No.1,518</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean (SD)</td>
<td>46.0 (16.3)</td>
<td>9.3 (5.3)</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>3,824 (75.0)</td>
<td>867 (57.1)</td>
</tr>
<tr>
<td>Ethnicity, n (%)</td>
<td>Hispanic</td>
<td>323 (6.3)</td>
</tr>
<tr>
<td></td>
<td>Not Hispanic</td>
<td>4,533 (88.9)</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>243 (4.8)</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td>African American</td>
<td>515 (10.1)</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>224 (4.4)</td>
</tr>
<tr>
<td></td>
<td>Caucasian</td>
<td>4,025 (78.9)</td>
</tr>
<tr>
<td></td>
<td>Other/Unknown</td>
<td>335 (6.6)</td>
</tr>
<tr>
<td>Disease duration (years), mean (SD)</td>
<td>2.4 (1.8)</td>
<td>2.4 (1.8)</td>
</tr>
<tr>
<td>Insurance type*, n (%)</td>
<td>Commercial insurance</td>
<td>3,485 (68.3)</td>
</tr>
<tr>
<td></td>
<td>Medicare</td>
<td>783 (15.4)</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>435 (8.5)</td>
</tr>
<tr>
<td></td>
<td>Uninsured</td>
<td>45 (0.9)</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>483 (9.4)</td>
<td>148 (9.8)</td>
</tr>
</tbody>
</table>

*single claim associated with ≥ 1 insurance category

Results

Adults
- 5,099 patients were included in the analysis, of whom 75.0% were females and mean (SD) age was 46.0 (16.3) years (Figure 1a, Table 1)
- Baseline comorbidities:
  - 13.4% and 12.7% of CIndU adults had a comorbidity score (ECI) of 1–4 and ≥5, respectively
  - The most frequent comorbidities were uncomplicated hypertension, chronic pulmonary disease, anxiety, depression, and inflammatory gastro-intestinal (GI) diseases (Figure 2a)
- After CIndU diagnosis:
  - Most frequent newly diagnosed comorbidities were allergies, inflammatory GI diseases, chronic pulmonary disease, anxiety, and obesity (Figure 2b)

Paediatrics
- 1,518 patients were included in the analysis, of whom 57.1% were females and mean (SD) age was 9.3 (5.3) years (Figure 1b, Table 1)
- Baseline comorbidities:
  - 17.3% and 6.7% of CIndU paediatrics had a comorbidity score (ECI) of 1–4 and ≥5, respectively
  - The most frequent comorbidities were chronic pulmonary disease, asthma, allergies, inflammatory GI diseases, and atopic dermatitis (Figure 3a)
- After CIndU diagnosis:
  - Most frequent newly diagnosed comorbidities were allergies, chronic pulmonary disease, asthma, inflammatory GI diseases, and anxiety (Figure 3b)

Conclusions
- This real-world study reveals new insights about these CIndU patients’ clinical profile despite certain limitations typical for this methodology based on EHR analysis
- There is a large increase in the percentage reporting allergies after CIndU diagnosis compared to baseline
- Respiratory conditions and allergies are more frequent among children than adults. Depression and anxiety is frequent among adults
- Adult and paediatric CIndU patients tend to present with various comorbidities prior and post diagnosis, reflecting the potential systemic nature of disease and high burden on patients

References

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Figure 1. Proportion of (a) adult and (b) paediatric patients by age group (years)

Figure 2. Most frequent comorbidities reported at (a) baseline and (b) after CIndU diagnosis (adults)

Figure 3. Most frequent comorbidities reported at (a) baseline and (b) after CIndU diagnosis (paediatrics)