Corticosteroid-Related Adverse Events in Chronic Idiopathic Urticaria

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INTRODUCTION
Oscillating data from both clinical trials and real-world practice suggest that oral corticosteroid therapy in patients with chronic idiopathic urticaria (CIU), who suffer from symptoms of CIU, is poorly tolerated due to adverse effects (AEs) that lead to negative health outcomes.2,3

OBJECTIVES
To study baseline OCS use among patients with CIU
To determine the extent to which use of OCS in patients with CIU increases corticosteroid-related AEs

METHODS
Study Population
Data from a commercial claims database was used for this study January 1, 2008-December 31, 2012, inclusive.

Patients were identified in calendar years 2008–2011 (identification period). We excluded patients with CIU who met the following criteria during a single calendar year:

1. Insufficient data: 2 outliers at 4.4 and 12.6 (years) (median, 49 [range, 18–83] years) and 71.0% were female (Table 1).

2. Exclusion criteria.
   - Not continuously enrolled in a health plan at the end of the baseline period
   - Enter the study population before January 1, 2008
   - First PAE before the index date
   - Baseline period OCS exposure
   - Have a primary diagnosis of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes 708.1, 708.8, or 708.9 (diabetic urticaria, other specified urticaria, and unspecified urticaria, respectively) 60 days after the index date, as well as the baseline period.

3. Primary conditions:
   - Lipid disorders, elevated cholesterol (15.9) years (median, 49 [range, 18–83] years)
   - Diabetes
   - Hypertension
   - Cardiovascular disease
   - Obesity
   - Obstructive sleep apnea
   - Vitiligo
   - Connective tissue disease
   - Gastrointestinal disorder
   - Polycythemia
   - Hemochromatosis
   - Anemia
   - Malignancy
   - Chronic renal disease
   - Chronic respiratory disease
   - Pulmonary fibrosis
   - Cholesterol-responsive conditions
   - Chronic gastrointestinal disease
   - Chronic dermatological disease
   - Hematology
   - Nephrology
   - Gastroenterology
   - Ophthalmology
   - Urology
   - Pulmonology
   - Rheumatology
   - Otolaryngology
   - Gastroenterology
   - Endocrinology
   - Oncology
   - Allergy
   - Pediatrics
   - Psychiatry
   - Dermatology
   - Nephrology
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   - Endocrinology
   - Oncology
   - Allergy
   - Pediatrics
   - Psychiatry
   - Dermatology
   - Nephrology
   - Ophthalmology
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   - Pediatrics
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   - Gastroenterology
   - Endocrinology
   - Oncology

RESULTS
Patient Characteristics
1,287 patients had a first PAE during the baseline period (Table 2).

CONCLUSIONS
CIU treatment should be carefully weighed against OCS exposure, given the risk of developing possible primary PAEs and the increased risk of possible AEs with increasing cumulative PE-OCS exposure.

REFERENCES

ACKNOWLEDGMENTS
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1. OCS treatment was used in ≤16% of patients with CIU followed for ≤12 months
2. OCS exposure was associated with an increased risk of any primary possible AEs when combined, and the same was true for the following possible AEs individually: hypertension, skeletal conditions, neuropsychiatric conditions, infectious diseases, diabetes, and obesity (Table 3).
3. The risk of possible AEs increased with increasing cumulative PE-OCS exposure (Figure 3).

4. When adjusted for age, sex, CCI score, and use of immunosuppressive and OCS exposure during the baseline period was associated with a risk of hypertension, skeletal conditions, neuropsychiatric conditions, infectious diseases, diabetes, and obesity (Table 2).
5. At any given point in time, all else being equal, a person with 1 additional gram of PE-OCS would face a 7% higher likelihood of developing any of the studied possible AEs than a similar individual without that additional grams of exposure. Similarly, an increase with 2 additional grams of PE-OCS would be 14% higher. The same likelihood was seen in other instances without an individual exposure.

Table 1. Baseline Patient Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All Patients (n=12,647)</th>
<th>Patients With PAE (n=1,287)</th>
<th>Patients Without PAE (n=11,360)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) age</td>
<td>49.2 (15.9)</td>
<td>51.0 (16.9)</td>
<td>48.4 (15.5)</td>
</tr>
<tr>
<td>Female (%)</td>
<td>58.5</td>
<td>60.9</td>
<td>57.1</td>
</tr>
</tbody>
</table>

Figure 1. Baseline Period OCS Exposure

Figure 2. Unadjusted RRs for PAEs by CIU Medication Use in the Baseline Period

Figure 3. Unadjusted RRs of PAEs by PE-OCS Exposure During the Baseline Period

Table 2. CIU Medication Use in the Baseline Period

<table>
<thead>
<tr>
<th>Medication</th>
<th>Patients With CIU (n=1,287)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisone</td>
<td>702 (55.6)</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>579 (45.2)</td>
</tr>
<tr>
<td>Atorvastatin</td>
<td>539 (42.1)</td>
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<tr>
<td>Lipid-soluble antihistamines</td>
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<tr>
<td>Immune-mediated agents (cytoplasma, dopamine, histamine)</td>
<td>539 (42.1)</td>
</tr>
<tr>
<td>Miscellaneous agents (dapsone, doxepin, hydroxychloroquine, methotrexate, mycophenolate, nortriptyline)</td>
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Table 3. Adjusted RRs for OSRs by CIU Medication Use in the Baseline Period

<table>
<thead>
<tr>
<th>Medication</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisone</td>
<td>1.07 (1.04–1.10)</td>
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<tr>
<td>Prednisolone</td>
<td>1.03 (1.00–1.07)</td>
</tr>
<tr>
<td>Atorvastatin</td>
<td>1.02 (0.98–1.05)</td>
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Table 4. Baseline Period OCS Exposure

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<tr>
<td>No baseline period OCS exposure</td>
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Table 5. Baseline Period OCS Exposure

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