Disease Characteristics Associated with Cushing’s Disease: A Multi-Center US Study

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BACKGROUND

An ongoing European Registry on Cushing’s syndrome (CS), ERCUSYN,1 is gathering data on clinical features, diagnostic procedures and therapeutic strategies in patients with CS. Our overarching goal was to gather data on occurrence of signs, symptoms, comorbidities and clinicopathological data in CS patients in the US.

OBJECTIVE

In the current presentation, we describe the prevalence treatment of signs, symptoms, and comorbidities in CS patients in the US, comparing results with the European registry, ERCUSYN.

METHODS

Study Design

• Data were collected from medical records at 10 US pituitary/endocrine centers, including major referral centers and regional/local centers, selected based on adequate number of CS patients treated, geographic location, and diversity of patient population.

• The study was approved by the Institutional Review Boards at each site.

Patient Selection

• Patients with initial CS diagnosis or recurrence during the past 20 years and who were ≥ 18 years old at the time of diagnosis were included in the study.

Data Collection

• Each site identified eligible patients, and trained site abstractors entered data via a secure electronic case report form.

• Data were collected from the time of presentation through 2014.

• Data quality checks for content, inconsistencies, and missing entries were performed daily.

Measures

• Signs, symptoms, and comorbidities recorded at any time during the pre-treatment period (or before the first CD therapy).

• Disease characteristics were defined by pursuing conceptually similar signs, symptoms, and comorbidities recorded during the pre-treatment period to make comparisons to pituitary-dependent CS patients in ERCUSYN.

• CD treatments: initial pituitary surgery for CD, radiotherapy, pharmacotherapy, and adrenalectomy done at any time after CD diagnosis.

Statistical Analysis

• Patient characteristics were reported in the full sample and in the pre-treatment subgroup (patients with CD-related signs, symptoms, and comorbidities documented in the medical records on or before the first CD therapy).

• Prevalence of signs, symptoms, comorbidities, disease characteristics, and weight were reported in the pre-treatment subgroup.

• All statistical analyses were performed using SAS® version 9.4 (SAS Institute, Cary, NC).

RESULTS

Prevalence of Signs, Symptoms, and Comorbidities Occurring before Initial Treatment for CD

<table>
<thead>
<tr>
<th>Signs</th>
<th>n (%)</th>
<th>Symptoms</th>
<th>n (%)</th>
<th>Comorbidities</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial plethora</td>
<td>52 (49.1)</td>
<td>Weight gain</td>
<td>76 (71.7)</td>
<td>Hypertension</td>
<td>74 (69.8)</td>
</tr>
<tr>
<td>Facial edema</td>
<td>52 (49.1)</td>
<td>Easy bruising</td>
<td>54 (50.0)</td>
<td>Hypothyroidism</td>
<td>48 (45.0)</td>
</tr>
<tr>
<td>Fat pads, posterolateral</td>
<td>50 (47.2)</td>
<td>Lipomatosis</td>
<td>46 (44.4)</td>
<td>Diabetes, type 2</td>
<td>33 (31.1)</td>
</tr>
<tr>
<td>Stria</td>
<td>55 (52.7)</td>
<td>Muscle weakness</td>
<td>42 (39.6)</td>
<td>Obesity</td>
<td>32 (30.2)</td>
</tr>
<tr>
<td>Fat pads, suprascapular</td>
<td>41 (39.6)</td>
<td>Excessive hairiness / hypertrichosis</td>
<td>40 (37.7)</td>
<td>Depression</td>
<td>24 (22.6)</td>
</tr>
<tr>
<td>Obesity, central</td>
<td>38 (35.9)</td>
<td>Stretch marks</td>
<td>31 (29.2)</td>
<td>Anxiety</td>
<td>17 (16.5)</td>
</tr>
<tr>
<td>Fat pads, malar</td>
<td>26 (24.9)</td>
<td>Sleep apnea</td>
<td>30 (28.3)</td>
<td>Sleep apnea</td>
<td>12 (11.3)</td>
</tr>
<tr>
<td>Obesity, general</td>
<td>25 (23.6)</td>
<td>Acne</td>
<td>22 (20.8)</td>
<td>Sleep apnea</td>
<td>9 (8.5)</td>
</tr>
<tr>
<td>Thin skin</td>
<td>21 (19.8)</td>
<td>Pseudocyesis</td>
<td>22 (20.8)</td>
<td>Obesity</td>
<td>8 (7.5)</td>
</tr>
<tr>
<td>Dehydration</td>
<td>21 (19.8)</td>
<td>Nephrotic syndrome</td>
<td>21 (19.8)</td>
<td>Nephrotic syndrome</td>
<td>8 (7.5)</td>
</tr>
</tbody>
</table>

• Treatment for CD

- Initial treatment was pituitary surgery in 156 patients (95.7%).
- Treatment during CD care: radiotherapy (n=22; 13.5%); pharmacotherapy (44; 27.0%); adrenocorticotropin (11; 6.7%).

LIMITATIONS

• The current study has a smaller sample size than the ERCUSYN study (n=317); however, data collection is ongoing to target a sample size of approximately 250 patients.

CONCLUSIONS

• This sample is comparable in distribution of demographic characteristics and clinical features to ERCUSYN, except for our inclusion ofracetemide and slightly different frequencies of common disease characteristics, although the two studies differed in study design, methods, and settings.

• Our results underscore the substantial comorbidity burden associated with CD.

• The data collection is ongoing, and future work will include a variety of analyses using this database, including our comprehensive review of the burden-of-illness, treatment pathways, and association of biochemical control and clinical outcomes.

REFERENCES


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