Acromegaly, a rare, slowly progressing disorder resulting from excessive growth hormone (GH), is associated with a variety of complications, including cardiovascular disease, reproductive disorders, and sleep apnea. 

**OBJECTIVE**

To describe the prevalence of complications and a variety of treatments in acromegaly patients.

**METHODS**

Study Design and Data Source

This was a retrospective cohort study combining 2 commercial, HIPAA-compliant U.S. claims databases, Thomson Reuters MarketScan and 365 Health PharMetrics. Data covered 1/1/2002-12/31/2009 for MarketScan and 1/1/2002-12/31/2008 for PharMetrics and 1/1/2002-12/31/2008 for MarketScan.

Study Population and Study Timeframe

Each acromegaly patient was followed for one calendar year following the first observed acromegaly diagnosis (See diagram).

**Initiation Criteria:**

1. medical claim with acromegaly diagnosis (ICD-9-CM code 253.0) in any diagnosis field at any time in 1/1/2002-12/31/2007 (PharMetrics) or 1/1/2003-12/31/2008 (MarketScan), and

   • either an additional claim with acromegaly diagnosis (criteria 1), or
   • evidence of treatment (criteria 2) for acromegaly (surgery, radiation, or medications) during the review period.

**Exclusion Criteria:**

Patients who were not continuously enrolled in the review period.

**LIMITATIONS**

- The study provided an initial evaluation of a possible case-finding algorithm for acromegaly using a large merged claims database (MarketScan and PharMetrics). Further review and analysis of the algorithm may be needed, followed by validation in medical charts.
- Some of the patients in this study may not have required acromegaly-related treatment if they had a surgical cure or entered remission prior to the observation period of this study.
- Only treatment in the study year was examined, and many patients would have required treatment for several years of observation.
- The bias of historical data extended before the study year makes it impossible to assess treatment patterns over time.
- The study population was a sample of commercially insured patients, which may not be generalizable to a non-managed care national population.

**CONCLUSIONS**

- Pharmacologic treatment is common, with octreotide and dopamine agonists used most frequently.
- Medical complications of acromegaly, including musculoskeletal abnormalities, hypopituitarism, sleep apnea, and reproductive system abnormalities are common.
- Several key complications of acromegaly have been shown in other research to be reversible with treatment.
- Appropriate attention to these complications along with adequate therapy and monitoring are critical in the approach to this disease.

**OUTCOMES**

- **Acromegaly Monitoring and Treatment (N=914)**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any biochemical monitoring test</td>
<td>1,234</td>
<td>52.8</td>
</tr>
<tr>
<td>Any IGF-1 test</td>
<td>1,189</td>
<td>50.9</td>
</tr>
<tr>
<td>Acromegaly treatment received</td>
<td>700</td>
<td>30.0</td>
</tr>
</tbody>
</table>

  - **Pharmacologic Treatment in Acromegaly Patients (N=914)**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>121</td>
<td>5.2</td>
</tr>
<tr>
<td>Radiation</td>
<td>57</td>
<td>2.4</td>
</tr>
<tr>
<td>Pharmacologic treatment</td>
<td>914</td>
<td>39.1</td>
</tr>
</tbody>
</table>

  - **Acromegaly-Related Complications (N=2,336)**

<table>
<thead>
<tr>
<th>Complication</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>234</td>
<td>9.6</td>
</tr>
<tr>
<td>Reproductive system abnormalities; and hypopituitarism.</td>
<td>54</td>
<td>2.3</td>
</tr>
<tr>
<td>Sleep apnea</td>
<td>122</td>
<td>5.2</td>
</tr>
</tbody>
</table>

  - **Acromegaly treatment received**

    - **During the study period, 5.2% (121) had surgery, 2.4% (57) received radiation therapy, and pharmacologic treatment was used by 39.1% (914).**

    - **The majority of patients were likely to have had surgery or radiation before the study period.**

    - **53% (1,234) of patients had at least one biochemical monitoring test (either IGF-1 or GH) during the year: 50.9% (1,189) of patients had IGF-1 and 30% (700) had GH test in that time period.**

  - **Acromegaly treatments (surgery, radiation, and pharmacologic treatment included octreotide LAR, lanreotide, dopamine agonists, octreotide SA, and pegvisomant).**

  - **This study provided an initial evaluation of a possible case-finding algorithm for acromegaly using a large merged claims database (MarketScan and PharMetrics). Further review and analysis of the algorithm may be needed, followed by validation in medical charts.**

  - **Some of the patients in this study may not have required acromegaly-related treatment if they had a surgical cure or entered remission prior to the observation period of this study.**

  - **Only treatment in the study year was examined, and many patients would have had surgery or radiation in years prior to the study.**

  - **The lack of historical data extended before the study year makes it impossible to assess treatment patterns over time.**

  - **The study population was a sample of commercially insured patients, which may not be generalizable to a non-managed care national population.**

**REFERENCES**


**AUTHOR disclosure**

This study was sponsored by Novartis Pharmaceuticals Corporation.