An Assessment of the Persistence and Medication Possession Ratio of Adjunctive Treatments to Levodopa in Patients with Parkinson’s Disease (PD)

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Background

• Parkinson’s disease (PD) is a progressive neurodegenerative disorder affecting almost one million people in the US.
• Levodopa remains the treatment of choice for PD to replace lost dopamine.
• Chronic levodopa treatment promotes progression to motor complications.
• Strategies for managing OFF include altering the dosage of levodopa (higher or more frequent doses), adding a dopamine agonist, or adding a monoamine oxidase-B (MAO-B) inhibitor, all of which may help to impact dyskinesia or ‘an ON’ syndrome.
• It is currently recognized that pharmacological therapies should be implemented early in the course of PD, strategies for managing OFF and LID should be based on an understanding of dopamine physiology.

Methods

An assessment of the persistence of levodopa filled prescriptions was conducted using a large database of anonymized commercial and Medicare patient insurance claims from Symphony Health Solutions (SHS). The SHS database captures treatment-specific information on diagnoses and prescriptions as recorded at physicians’ offices and pharmacies, respectively.

Inclusion Criteria

• Claims covering the period from November 2011 to October 2016 were included.

Exclusion Criteria

• For the secondary persistence analysis, patients from the SHS database were included in the study based on their continuous levodopa and levodopa-adjunctive prescription history, which allowed for the identification of Parkinson’s subjects receiving adjunctive treatment, regardless of inconsistent diagnostic codes reporting.

Results

Overall Database

• The overall dataset contained nearly 1.1M patients with 1 or more levodopa filled prescriptions.
• Over 550,000 patients have at least 1 prescription per year of any drug over the 5 year period studied – this large number of unique patients accounts for the large number of prescriptions in patients not receiving levodopa.

Table 1. Proportion of levodopa treated patients with adjunctive treatment (w/% post levodopa initiation)

<table>
<thead>
<tr>
<th>Adjunctive Treatment</th>
<th>Overall Database</th>
<th>Post-Levodopa Cohort</th>
<th>Post-Rasagiline Cohort</th>
<th>Post-Ropinirole Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amantadine IR</td>
<td>69%</td>
<td>55%</td>
<td>21%</td>
<td>7%</td>
</tr>
<tr>
<td>Rasagiline</td>
<td>41%</td>
<td>30%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Ropinirole</td>
<td>40%</td>
<td>31%</td>
<td>12%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Aimantadine HCl Dosing and Persistence

• For the primary analysis, patients were classified into 3 groups: patients taking only levodopa, patients taking levodopa with amantadine HCl IR, or patients taking levodopa with rasagiline or ropinirole.

Table 2. Distribution of daily dose following amantadine HCl IR initiation

<table>
<thead>
<tr>
<th>Daily dose (mg/day)</th>
<th>Proportion of patients (n=8,200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>98%</td>
</tr>
<tr>
<td>&lt;100</td>
<td>1%</td>
</tr>
<tr>
<td>100-199</td>
<td>1%</td>
</tr>
<tr>
<td>200-299</td>
<td>1%</td>
</tr>
<tr>
<td>≥300</td>
<td>0%</td>
</tr>
</tbody>
</table>

Conclusions

• Levodopa treatment remains the gold standard for treating Parkinson’s disease patients, with over 70% of patients still taking levodopa to treat their Parkinson’s motor symptoms.
• Parkinson’s patients take levodopa in combination with several drugs, including dopamine agonists, monoamine oxidase-B (MAO-B) inhibitors, and anticholinergics.
• The frequency with which patients take these drugs in combination with levodopa is unpredictable, and amantadine HCl IR persists for less than 1 year.
• For patients adding a drug to a stable levodopa regimen, persistence of at least 12 months is much lower for adjunctive treatments, with the highest for rasagiline (60%) and lowest for levodopa (40%).

Acknowledgments and Disclosures

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References