All-cause Inpatient Hospitalizations in Medicaid Patients with Dual Diagnoses of Schizophrenia and Bipolar Disorder who Initiated Long-acting Injectable Antipsychotics

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Introduction

- Schizophrenia affects approximately 1.1% to 2.7 million adults in the United States (US).
- Approximately 0.3% of the US population has schizoaffective disorder.
- The co-occurrence of schizophrenia and a mood disorder (major depressive or bipolar disorder).
- Existing research has demonstrated the superiority of long-acting injectable antipsychotics (LAIs) over oral antipsychotics in preventing hospitalizations, a proxy for relapse, among patients with schizophrenia.
- The literature on clinical effectiveness and economic impact of selecting one LAI versus another is scarce, and existing studies have not included schizophrenia patients with comorbid bipolar disorder.

Objective

To compare all-cause inpatient hospitalizations among Medicaid patients with dual diagnoses of schizophrenia and bipolar disorder who initiated long-acting injectable antipsychotics (LAIs).

Methods

- Retrospective cohort study using Truven MarketScan® Medicaid Database.
- Patient Identification
  - Schizophrenia patients (21 outpatient claims or 2 outpatient claims with ICD-9-CM code 295.xx) during the study period between 01/01/2012 and 06/30/2015
  - LAI cohorts
    - At least one of the following LAIs and
    - Initiated one of the following LAIs during the ID period (01/01/2013 - 06/30/2014)
      - aripiprazole, haloperidol, paliperidone, risperidone
      - Index date: first LAI use
      - No LAI index use 1 year prior to the index date (change from different LAI was allowed)
  - Dual diagnoses: schizophrenia patients who had bipolar disorder within one year prior to the index date
  - Patients followed for variable period until disenrollment or study end
  - Additional inclusion criteria
    - Schizophrenia diagnosis before index date
    - 1-year pre- and post-index continuous enrollment
    - Exclusion criteria: ≤ 17 years old on index date
  - Outcome measures
    - All-cause inpatient hospitalization rates in 1-year post-index period
    - Time to first all-cause hospitalization during entire follow-up period
  - Statistical analyses
    - Kaplan-Meier curve to estimate time to first all-cause hospitalization
    - Logistic regression and Cox regression models to estimate adjusted all-cause inpatient hospitalization risk of each LAI group
    - Models adjusted for patient demographic and clinical characteristics, baseline medication use, and baseline emergency department (ED) visits or hospitalizations

Results

- Of 935 identified LAI users with dual diagnoses of schizophrenia and bipolar disorder (Figure 1), 49.3% received paliperidone, 23.3% haloperidol, 16.4% risperidone, and 11.0% aripiprazole (Table 1).
- The mean (SD) age of the overall population was 37.2 (12.6) years old. More than 48% of the patients were female, and approximately 44% were African Americans (Table 1).
- Adjusted post-index 1-year hospitalization rate in aripiprazole (38.6%) was lower than in paliperidone (41.9%), haloperidol (45.6%), and risperidone (47.1%), but the differences were not statistically significant (p=0.05) (Table 2).
- The mean time to first hospitalization in aripiprazole was 647 days, compared with 507 days in paliperidone, 426 days in haloperidol, and 419 days in risperidone LAI cohorts (p=0.42) (Figure 2).

Figure 1. Patient Identification

Table 1. Patient Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Paliperidone</th>
<th>Haloperidol</th>
<th>Risperidone</th>
<th>Aripiprazole</th>
<th>All-cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>529 (55.5%)</td>
<td>384 (40.6%)</td>
<td>270 (28.8%)</td>
<td>146 (15.7%)</td>
<td>935 (100%)</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>303 (57.4%)</td>
<td>203 (52.8%)</td>
<td>154 (57.0%)</td>
<td>79 (54.3%)</td>
<td>639 (68.6%)</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>226 (42.6%)</td>
<td>181 (47.2%)</td>
<td>116 (43.0%)</td>
<td>67 (45.7%)</td>
<td>296 (31.4%)</td>
</tr>
<tr>
<td>Median age (years)</td>
<td>34.8 (12.6)</td>
<td>35.6 (13.0)</td>
<td>34.6 (12.7)</td>
<td>33.9 (12.1)</td>
<td>35.2 (12.6)</td>
</tr>
<tr>
<td>Median days till first hospitalization</td>
<td>647 (292-1268)</td>
<td>407 (232-925)</td>
<td>419 (292-661)</td>
<td>367 (232-661)</td>
<td>421 (292-661)</td>
</tr>
</tbody>
</table>

Table 2. Adjusted Inpatient Hospitalization

<table>
<thead>
<tr>
<th>LAI</th>
<th>Adjusted Rate (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paliperidone</td>
<td>0.377 (0.324 - 0.435)</td>
<td>0.006</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>0.419 (0.370 - 0.470)</td>
<td>0.006</td>
</tr>
<tr>
<td>Risperidone</td>
<td>0.456 (0.407 - 0.508)</td>
<td>0.006</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>0.450 (0.391 - 0.509)</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Figure 2. Time to First All-cause Hospitalization during the Entire Post-index Period

- With aripiprazole as the reference group, the risk of having all-cause inpatient hospitalizations during the entire follow-up was higher in haloperidol and paliperidone cohorts, although differences were not statistically significant (p=0.05) (Table 2).

Conclusions

- To our knowledge, this is the first attempt to compare LAIs on their ability to reduce inpatient hospitalizations among Medicaid patients with dual diagnoses of schizophrenia and bipolar disorder.
- Patients treated with aripiprazole had a numerically lower risk of being hospitalized compared with those treated with paliperidone, and risperidone LAIs, although the differences were not statistically significant.

References

2. Table 2. Adjusted Inpatient Hospitalization

References