Comparisons of Hospital Readmission Rates in Patients with Bipolar Disorder Receiving Long-acting Injectable Antipsychotics during Hospitalization

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Introduction

- Bipolar disorder affects approximately 2.6% of adults in the United States.[1]
- Even with treatment, approximately one-third of patients with bipolar disorder relapse within 1 year.[2]
- Long-acting injectable antipsychotics (LAIs) have shown superiority over oral antipsychotics in preventing hospitalizations and readmissions among patients with schizophrenia.[3,4,5] Patients with bipolar disorder may also benefit from such LAI treatment.[6]
- We found no studies about the impact of using one LAI versus another on hospital readmissions among patients hospitalized for bipolar disorder.

Objective

To explore all-cause and psychiatric-related hospital readmission rates in patients with bipolar disorder who were treated with different LAIs during their index hospitalization.

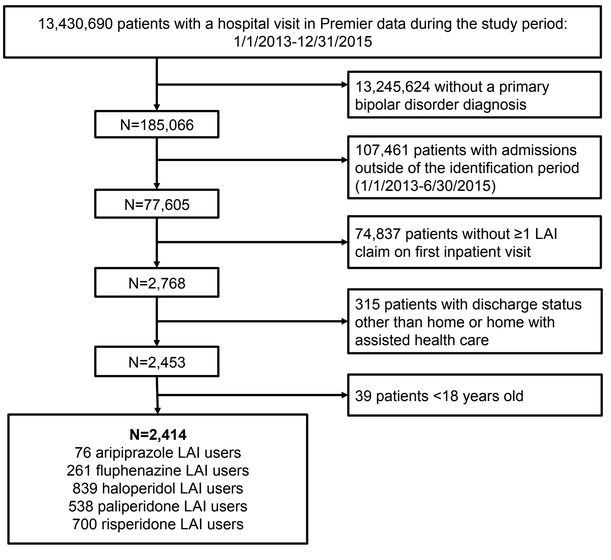
Methods

- Retrospective cohort study using the Premier Perspective Database™
- Patient identification
  - Hospitalized patients with primary diagnosis for bipolar disorder (ICD-9-CM codes: 296.0x, 296.1x, 296.4x, 296.6x, 296.7x, 296.8x) during the study identification period between 01/01/2013 and 6/30/2015
    - with ≥ 1 claim for one of the following LAIs during the hospitalizations:
      - Aripiprazole
      - Fluphenazine
      - Haloperidol
      - Paliperidone
      - Risperidone
    - Discharged to home or to a home care program
    - Index hospitalization: first admission
    - Index therapy: LAI therapy during index hospitalization
  - Exclusion criteria
    - ≤17 years old during index hospitalization
    - <6 months of follow-up
- Outcome measure
  - Rates of 30-, 60-, 90-, and 180-day all-cause and psychiatric readmissions
- Statistical analysis
  - Chi-squared or Fisher's exact tests performed for dichotomous variables, and independent t-tests or Wilcoxon rank-sum tests for continuous variables.
  - Unadjusted all-cause and psychiatric-related readmission rates were presented.

Results

- Of the identified 77,605 hospitalized patients with bipolar disorder, 2,414 (3.1%) were treated with LAIs during index hospitalization: aripiprazole (n=76), fluphenazine (n=261), haloperidol (n=839), paliperidone (n=538), or risperidone (n=700) (Figure 1).
- The mean (SD) age of the population of LAI users was 39.7 (14.9) years old (Table 1).
- Significant differences existed in race, depression, anxiety, and Charlson Comorbidity Index (CCI) score across different cohorts (Table 1).
- The aripiprazole cohort had the numerically lowest, unadjusted 60-, 90-, and 180-day all-cause and psychiatric-related readmission rates: all-cause: 14.5% (60-day), 17.1% (90-day), 23.7% (180-day); psychiatric-related: 14.5%, 17.1%, 22.4%) (Figure 2).
  - Differences were not statistically significant.

Figure 1. Patient Identification



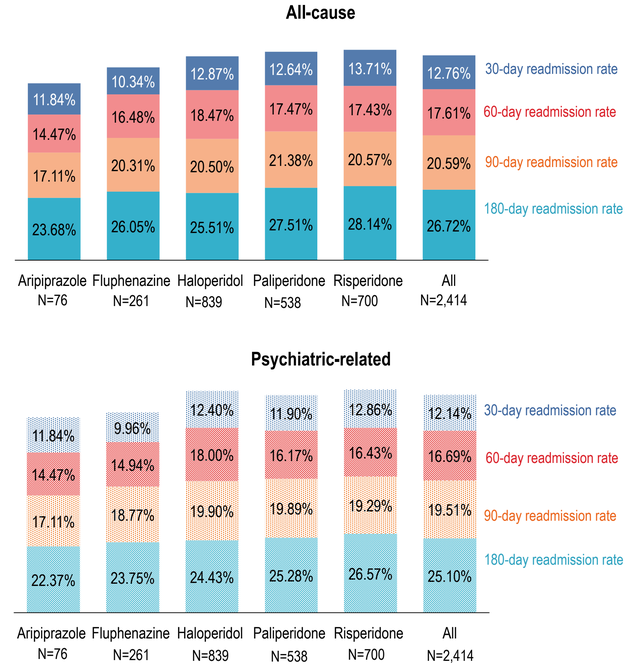
Results (cont'd)

Table 1. Patient Characteristics

	Aripiprazole N=76; 3.2%	Fluphenazine N=261; 10.8%	Haloperidol N=839; 34.8%	Paliperidone N=538; 22.3%	Risperidone N=700; 29.0%	All N=2,414	P Value
Demographics							
Age, year, mean (SD)	38.7 (15.3)	41.9 (14.9)	39.8 (14.3)	38.9 (14.7)	39.7 (15.7)	39.7 (14.9)	0.0973
Female, n (%)	36 (47.4)	141 (54.0)	417 (49.7)	269 (50.0)	332 (47.4)	1,195 (49.5)	0.4713
Race, n (%)							<0.0001
White	43 (56.6)	93 (35.6)	350 (41.7)	316 (58.7)	365(52.1)	1,167 (48.3)	
Black	17 (22.4)	95 (36.4)	258 (30.8)	122 (22.7)	162 (23.1)	654 (27.1)	
Other	16 (21.1)	73 (28.0)	231 (27.5)	100 (18.6)	173 (24.7)	593 (24.6)	
Comorbidities							
CCI[a], mean (SD)	0.4 (0.7)	0.6 (1.0)	0.4 (0.7)	0.4 (0.8)	0.4 (0.7)	0.4 (0.8)	0.0019
Psychiatric, n (%)	58 (76.3)	182 (69.7)	604 (72.0)	390 (72.5)	494 (70.6)	1,728 (71.6)	0.7514
Depression	1 (1.3)	2 (0.8)	9 (1.1)	13 (2.4)	4 (0.6)	29 (1.2)	0.0483
Anxiety	15 (19.7)	31 (11.9)	99 (11.8)	91 (16.9)	91 (13.0)	327 (13.6)	0.0304
Personality disorder	6 (7.9)	22 (8.4)	106 (12.6)	63 (11.7)	91 (13.0)	288 (11.9)	0.2481
Substance abuse disorders	45 (59.2)	150 (57.5)	483 (57.6)	312 (58.0)	377 (53.9)	1,367 (56.6)	0.5281
Schizophrenia	16 (21.1)	59 (22.6)	142 (16.9)	80 (14.9)	114 (16.3)	411 (17.0)	0.0699
Somatic[b], n (%)	33 (43.4)	135 (51.7)	367 (43.7)	228 (42.4)	286 (40.9)	1,049 (43.5)	0.0504

[a] Charlson Comorbidity Index.
[b] Somatic comorbidities included obesity, diabetes, hyperlipidemia, and hypertension.

Figure 2. Unadjusted Hospital Readmission Rates



Limitations

- Readmissions recorded in the database were only those occurring at the same hospital, thus, rates of re-hospitalization may be underestimated.
- The sample size for patients with aripiprazole was small; therefore, the study was unable to show statistically significant differences across LAIs. This study should be replicated in a database with a larger sample size.

Conclusions

- To our knowledge, this real-world study is the first to explore 30-, 60-, 90-, and 180-day readmission rates among hospitalized patients with bipolar disorder treated with different LAIs.
- Compared with those treated with haloperidol, paliperidone, risperidone, and fluphenazine LAIs, patients treated with aripiprazole LAI had numerically lower 60-, 90-, and 180-days hospital readmission rates, although aripiprazole LAI sample size was small and the differences were not statistically significant.
- Although risperidone LAI is currently the only FDA approved LAI for maintenance treatment of bipolar disorder, our study results support current literature claims that other LAIs are used off-label for the treatment of bipolar disorder.

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Disclosures: Greene and Stellhorn are employees of Otsuka Pharmaceutical Development and Commercialization, Inc., Princeton, NJ. Yan and Broder are employees of Partnership for Health Analytic Research, LLC, Beverly Hills, CA. Touya is an employee of Lundbeck, Deerfield, IL. Funding for the study and this poster was received from Otsuka Pharmaceutical Development and Commercialization, Inc. and Lundbeck.

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