Healthcare Resource Utilization 12 Months Following Initiation of Olanzapine/Samidorphan: Real-World Assessment of Patients With Bipolar I Disorder

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INTRODUCTION

- Antipsychotic medications are effective at treating the symptoms of mania in patients with bipolar I disorder (BD-I)[1]
- Despite their efficacy, atypical antipsychotics are associated with adverse effects, including weight gain, which can negatively affect persistence on treatment, as well as patients' health and well-being[2-4]
- The combination of olanzapine and samidorphan (OLZ/SAM) provides the established antipsychotic efficacy of olanzapine while mitigating olanzapine-associated weight gain[5-7]
- OLZ/SAM treatment was associated with significant reductions in acute healthcare resource utilization (HCRU) in a previous real-world study comparing the 6 months before and after initiating OLZ/SAM[8]
- This analysis builds on the previous 6-month analysis[8] by extending the pre- and post-OLZ/SAM periods to 12 months

OBJECTIVE

- To assess and compare HCRU among adult patients with BD-I in the 12 months before and after initiating OLZ/SAM treatment

METHODS

Data Source

- This retrospective analysis used inpatient (IP), outpatient (OP), and pharmacy claims data from October 18, 2020, to December 31, 2023, from Komodo Healthcare Map, a fully deidentified US-based database of ~150 million patients covered by a commercial (66%), Medicaid (27%), or Medicare Advantage (7%) plan

Patients and Study Design

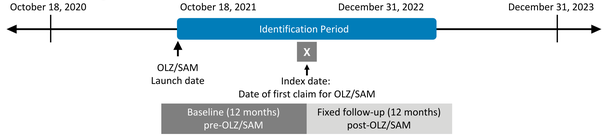
Inclusion Criteria

- Age ≥18 years with ≥1 pharmacy or medical claim for OLZ/SAM
- ≥12 months of continuous enrollment with medical and pharmacy benefits before (baseline period) and after (fixed follow-up period) the index date (date of first medical or pharmacy claim for OLZ/SAM)
- ≥1 medical claim for BD-I during the baseline or follow-up period
  - Patients with medical claims for both schizophrenia and BD-I were assigned an indication of schizophrenia

Exclusion Criterion

- A pharmacy or medical claim for OLZ/SAM during the baseline period

Figure 1. Study Design



OLZ/SAM, combination olanzapine and samidorphan.

Outcomes

- Baseline patient demographics, clinical characteristics, and medication use
- Treatment patterns of OLZ/SAM, including adherence, persistence, and discontinuation
- HCRU, including IP admissions, emergency department (ED) and OP visits, average number of IP days in hospital per patient, and average length of stay (LOS) per hospitalization in each of the following categories:
  - All-cause HCRU
  - Mental health–related HCRU
  - BD-I–related HCRU

Statistics

- Baseline patient demographics and clinical characteristics are reported as numbers and percentages for categorical variables and means and SDs for continuous variables
- The following unadjusted pairwise comparisons were used for 12-month pre-post comparisons:
  - Paired t-test for normally distributed continuous variables
  - Wilcoxon signed-rank test for non-normally distributed continuous variables
  - McNemar test for dichotomous variables
- A secondary completer analysis of HCRU was conducted in the subset of patients who received continuous treatment with OLZ/SAM for the full 12 months of follow-up

RESULTS

- After eligibility criteria were applied, the analysis included data from 1004 patients with BD-I; of these, 300 (29.9%) were continuously treated with OLZ/SAM for the full 12 months

Table 1. Baseline Patient Demographics

Characteristics	(N=1004)
Age, years, mean (SD)	39.0 (12.5)
Sex, n (%)	
Female	691 (68.8)
Male	308 (30.7)
Unknown	5 (0.50)
Region, n (%)	
South	330 (32.9)
Midwest	283 (28.2)
West	216 (21.5)
Northeast	175 (17.4)
Insurance type, n (%)	
Medicaid	507 (50.5)
Commercial	370 (36.9)
Medicare Advantage	126 (12.5)
Unknown	1 (0.1)

Table 2. Baseline Clinical Characteristics

Characteristics	(N=1004)
Select health characteristics reported by ≥10% of patients during baseline period, n (%)	
Anxiety disorder	741 (73.8)
Major depressive disorder	442 (44.0)
Any substance use disorder	386 (38.4)
Obesity	377 (37.5)
Hyperlipidemia	321 (32.0)
Hypertension	310 (30.9)
Posttraumatic stress disorder	306 (30.5)
Alcohol use disorder	178 (17.7)
Type 2 DM	149 (14.8)
Intentional self-inflicted injury	100 (10.0)
Last antipsychotic use before index date, n (%)	
Any second-generation oral[a]	882 (87.8)
Any second-generation LAI	27 (2.7)
Any first-generation oral	24 (2.4)
Any first-generation LAI	1 (0.1)
None	78 (7.8)
Other common medications taken during baseline period, n (%)	
Mood stabilizer	775 (77.2)
Antidepressant	760 (75.7)
Anxiolytic	609 (60.7)
Antihypertensive	526 (52.4)
Metformin, patients with type 2 DM	92 (9.2)
Metformin, patients without type 2 DM	79 (7.9)

[a]Olanzapine was used by 47.9% of patients and quetiapine by 12.6% of patients.
DM, diabetes mellitus; LAI, long-acting injectable.

Table 3. Adherence, Persistence, and Discontinuation After OLZ/SAM Initiation

Follow-up[a] treatment patterns	(N=1004)
Medication possession ratio,[b] mean (SD)	0.86 (0.20)
Proportion of days covered,[c] mean (SD)	0.48 (0.36)
Days persistent,[d] mean (SD)	173.7 (139.9)
Discontinuation of index therapy,[e] n (%)	704 (70.1)

[a]The follow-up period began on the index date and ended 12 months after the index date. [b]Calculated as sum of days' supply of index medication during follow-up divided by number of days in the follow-up period. [c]Calculated as number of days for which medication was available (based on filled prescriptions) divided by the number of days in the follow-up period. [d]Measured as the number of days from the index date to the discontinuation date (for patients who discontinued) or from the index date to the end of the follow-up period (for patients who did not discontinue). [e]Defined as a minimum 45-day gap in therapy.
OLZ/SAM, combination olanzapine and samidorphan.

HCRU: All Patients

- Significant reductions in the proportions of patients with ≥1 all-cause (**Figure 2**), mental health–related (**Figure 3**), and BD-I–related (**Figure 4**) IP admissions and ED visits and in average number of IP days in hospital per patient were observed in the 12 months after initiating OLZ/SAM treatment
- Average LOS per hospitalization was significantly decreased for all-cause and mental health–related HCRU but was not significantly lower for BD-I–related HCRU

Figure 2. All-Cause HCRU: All Patients[a,b]

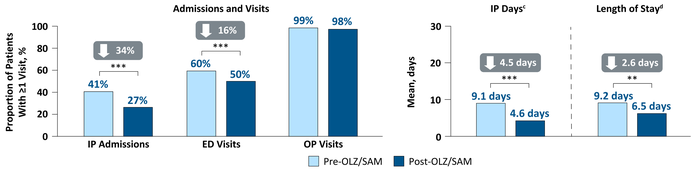


Figure 3. Mental Health–Related HCRU: All Patients[a,b]

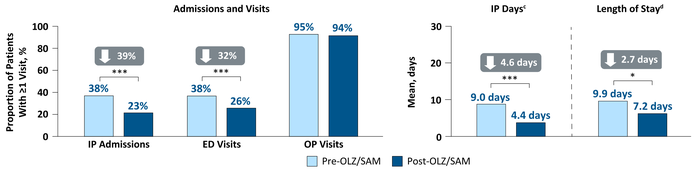
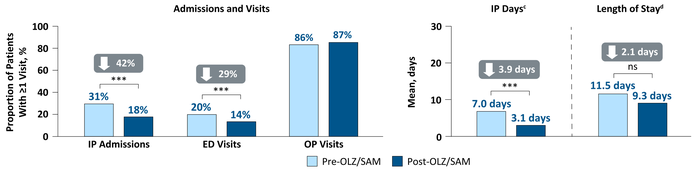


Figure 4. BD-I–Related HCRU: All Patients[a,b]



*P<0.05; **P<0.01; ***P<0.001.
[a]Gray boxes represent relative change from baseline. [b]Numbers are rounded for clarity and may not represent exact values. [c]Defined as the total number of inpatient days divided by the total number of patients. [d]Defined as the total number of inpatient days divided by the total number of hospital admissions.
BD-I, bipolar I disorder; ED, emergency department; HCRU, healthcare resource utilization; IP, inpatient; ns, not significant; OLZ/SAM, combination olanzapine and samidorphan; OP, outpatient.

Completer Analysis

- Statistically significant and numerically larger reductions in proportions of patients with ≥1 all-cause (**Figure 5**), mental health–related (**Figure 6**), and BD-I–related (**Figure 7**) IP admissions and ED visits and in average number of IP days in hospital per patient were observed in the subset of patients receiving OLZ/SAM treatment for the entire 12-month follow-up period (n=300) compared with the overall study population
- Average LOS per hospitalization was significantly decreased for all-cause and mental health–related HCRU but was not significantly lower for BD-I–related HCRU

Figure 5. All-Cause HCRU: Completers on OLZ/SAM for Entire 12 Months[a,b]

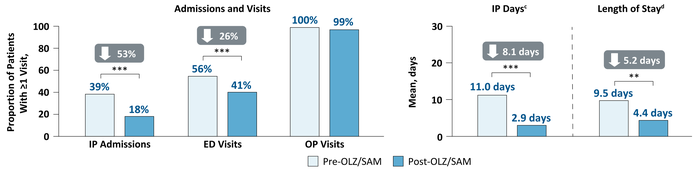


Figure 6. Mental Health–Related HCRU: Completers on OLZ/SAM for Entire 12 Months[a,b]

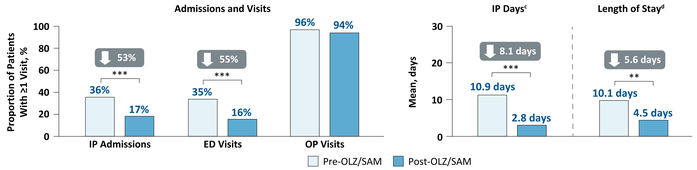
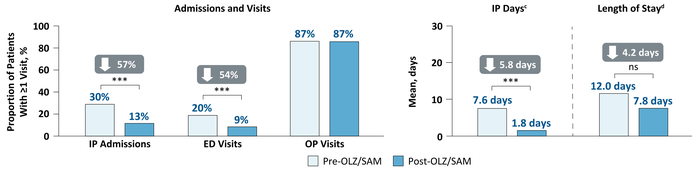


Figure 7. BD-I–Related HCRU: Completers on OLZ/SAM for Entire 12 Months[a,b]



**P<0.01; ***P<0.001.
[a]Gray boxes represent relative change from baseline. [b]Numbers are rounded for clarity and may not represent exact values. [c]Defined as the total number of inpatient days divided by the total number of patients. [d]Defined as the total number of inpatient days divided by the total number of hospital admissions.
BD-I, bipolar I disorder; ED, emergency department; HCRU, healthcare resource utilization; IP, inpatient; ns, not significant; OLZ/SAM, combination olanzapine and samidorphan; OP, outpatient.

LIMITATIONS

- Results from this population may not be generalizable to uninsured populations
- A claim for a filled prescription does not indicate medication adherence
- The presence of a diagnosis code may not definitively be indicative of disease presence or causality, nor does the presence of a claim indicate disease severity
- Because of the fixed follow-up time, HCRU and treatment patterns reported herein may not fully capture the effects of longer-term (>12-month) OLZ/SAM use

CONCLUSIONS

- In this real-world analysis of HCRU in patients with BD-I, OLZ/SAM initiation was associated with significant reductions in hospital-based HCRU
- After initiating OLZ/SAM, significant decreases in rates of IP admissions and ED visits, as well as the mean number of IP days, were observed across all HCRU categories; rates of OP visits were similar
- Average LOS per hospitalization decreased significantly for all-cause and mental health–related HCRU; numerical reductions observed for BD-I–related HCRU were not statistically significant
- Patients continuously treated with OLZ/SAM for the full 12 months had numerically greater reductions in hospital-based HCRU compared with the overall study population
- Results indicate that OLZ/SAM initiation may result in clinically meaningful reductions in real-world disease burden (as evidenced by decreases in hospital-based HCRU) and that longer treatment retention (persistence) is associated with improved effectiveness

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AUTHOR DISCLOSURES

RJ has acted as consultant for AbbVie, Acadia, Adamas, Alfasigma, Alkermes, Almatica, Axsome, Biogen, Boehringer Ingelheim, Cingulate Therapeutics, Corium, Eisai, Evidera, Impel, Janssen, Lilly, Lundbeck, Merck, Neos Therapeutics, Neurocrine Biosciences, Osmotica, Otsuka, Pamlab, Pfizer, Sage Therapeutics, Shire, Sunovion, Supernus, Takeda, Teva, Transcend Therapeutics, and Viatris; has received speaker/promotional honoraria from AbbVie, Alkermes, Almatica, Axsome, Corium, Eisai, Intra-Cellular Therapies, Ironshore Pharmaceuticals, Janssen, Lilly, Lundbeck, Merck, Neos Therapeutics, Otsuka, Pamlab, Pfizer, Shire, Sunovion, Takeda, Tris Pharmaceuticals, and Viatris; has served on an advisory board for Adamas, Alkermes, Corium, Eisai, Janssen, Lilly, Lundbeck, Merck, Neos Therapeutics, Neurocrine Biosciences, Otsuka, Pamlab, Pfizer, Sage Therapeutics, Shire, Sunovion, Supernus, Takeda, and Teva; and has received research funding from AbbVie, Lilly, Lundbeck, Otsuka, Pfizer, Shire, and Takeda. **HRP** and **MJD** are or were employees of Alkermes, Inc., and may own stock/options in the company. **AGH** is or was an employee of Optum, Inc., a health services innovation company that received funding from Alkermes, Inc., to conduct this study and analyze the data used for this publication. **HEO** has been a consultant to Alkermes, Biogen, Bristol Myers Squibb, Intra-Cellular Therapies, Janssen, Karuna, Neurocrine, Otsuka, Sage Therapeutics, and Sunovion; is on the speakers' bureau for and has received honoraria from Alkermes, Bristol Myers Squibb, Intra-Cellular Therapies, Lundbeck, Neurocrine, Otsuka, and Teva; receives no royalties; and holds no stock options. **AJC** has been a consultant to 4M Therapeutics, AbbVie, Acadia, Alfasigma, Alkermes, Anavex Life Sciences, Axsome, Biogen, BioKoti, Boehringer Ingelheim, Bril Biosciences, Cerevel, Corium, Delpor, Intra-Cellular Therapies, Ironshore Pharmaceuticals, Janssen, Karuna, LivaNova, Lundbeck, Luye Pharma, MedAvante-ProPhase, Neumora, Neurocrine, NeuroSigma, Noven, Otsuka, Relmada, Reviva, Sage Therapeutics, Sumitomo, Sunovion, Supernus, Takeda, Teva, Tris Pharma, Vanda, and VistaGen Therapeutics; is on the speakers' bureau for and has received honoraria from AbbVie, Acadia, Alfasigma, Alkermes, Axsome, BioKoti, Corium, Intra-Cellular Therapies, Ironshore Pharmaceuticals, Janssen, Lundbeck, Neurocrine, Noven, Otsuka, Sunovion, Supernus, Takeda, Teva, Tris Pharma, and Vanda; is on a data safety monitoring board for COMPASS Pathways and Freedom Biosciences; is the chief medical officer of the Neuroscience Education Institute; holds stock options from 4M Therapeutics and Relmada; and receives no royalties.

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