Treatment Patterns and Healthcare Resource Utilization of Patients Early in Schizophrenia Illness Initiating Aripiprazole Lauroxil Versus Oral Aripiprazole: A Retrospective Claims-Based Study

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BACKGROUND

- Optimal treatment of patients with schizophrenia, including those who are early in the course of their illness, has the potential to provide long-term benefits[1]
- Early initiation of treatment with long-acting injectable (LAI) antipsychotic medications, which provide consistent medication exposure over various dosing intervals,[2] may improve clinical and real-world outcomes in patients with schizophrenia[3-5]
- In a real-world study, patients with schizophrenia initiating the atypical LAI antipsychotic aripiprazole lauroxil® (AL) were more likely to be adherent to treatment, had longer medication persistence, and had reduced odds of acute healthcare resource utilization (HCRU) compared with a propensity score–matched cohort initiating oral aripiprazole (OA)[a] (see accompanying poster, Clinical Characteristics, Treatment Patterns, and Healthcare Resource Utilization of Patients Prescribed Aripiprazole Lauroxil Versus Oral Aripiprazole: A Retrospective Claims-Based Study)
  - The secondary objective of the real-world study was to assess these same outcomes in a subgroup patients with schizophrenia who were early in their illness

OBJECTIVE

- This subgroup analysis compared real-world treatment patterns and HCRU among early-in-illness patients with schizophrenia initiating AL or OA

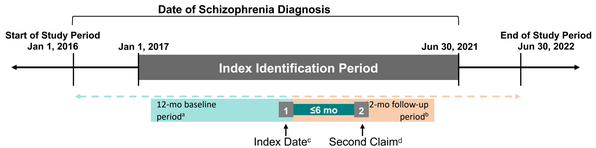
METHODS

Data Source

- Administrative claims data from January 1, 2016, to June 30, 2022, for privately or publicly insured persons across the United States obtained from the Merative™ MarketScan® Commercial Claims and Encounters, Medicare Supplemental, and Medicaid Multi-State research databases were analyzed retrospectively

Study Design and Patient Selection

Figure 1. Study Design



[a]Patients had to have ≥12 months of continuous enrollment before and ≥12 months of continuous enrollment after the index date; baseline medical history was based on the 12-month period before and inclusive of the index date. [b]The follow-up period from the index date (exclusive) to the date of disenrollment or end of study period allowed for a fixed 12 months of follow-up to assess treatment patterns and healthcare resource utilization. [c]Date of first aripiprazole lauroxil or oral aripiprazole claim on or after initial diagnosis date. [d]The second of 2 claims (pharmacy or medical) was required to be within 6 months of the first claim.

- "Early-in-illness" patients were defined as those aged 18–40 years who initiated the index treatment ≤1 year after their first observed schizophrenia diagnosis
- Criteria for identifying patients for the study and the early-in-illness subgroup are listed in **Figure 2**

Outcomes

- Treatment patterns
  - Discontinuation: a continuous gap of ≥60 days without a claim for the index prescription following the therapeutic window for AL or after the previous claim's days' supply for OA
  - Persistence: the number of days from the index date to date of first discontinuation or end of the 1-year follow-up period, whichever occurred first
  - Switching: the presence of a claim for antipsychotic medication other than that initiated at index within the 60-day maximum allowable gap from the date of discontinuation
  - Proportion of days covered (PDC): calculated as number of available days of index therapy divided by 365
  - Adherent: PDC ≥ 0.80
- HCRU
  - Proportions of patients with all-cause and mental health–related inpatient (IP) admissions and outpatient (OP) and emergency department (ED) visits
  - Average utilization per patient per month (PPPM) for the outcomes listed above as well as all-cause OP pharmacy claims

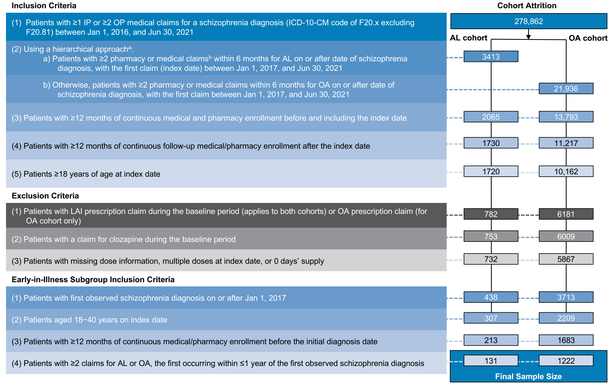
Statistical Analysis

- Propensity score matching (using a 1:1 matching ratio) was used to balance the treatment groups on 22 measured covariates (eg, age, sex, index year, and baseline HCRU)
- Treatment patterns
  - Persistence was compared between the matched AL and OA early-in-illness cohorts using a Cox proportional hazards model
  - Proportions adherent (PDC ≥ 0.80) were compared between the 2 matched cohorts using a logistic regression model
  - Other treatment pattern outcomes were analyzed descriptively
- HCRU
  - A logistic regression model compared binary HCRU outcomes (occurrence of event, yes or no) between the 2 matched cohorts
  - A 2-part modeling strategy combining logistic and Poisson regression models was used to compare visit counts PPPM between the 2 matched cohorts, yielding the estimated rate ratio (RR); bootstrapping was used for generating 95% CIs

RESULTS

- Of the 6599 patients in the overall analysis, 1353 (20.5%) patients met the early-in-illness subgroup criteria (AL cohort, n=131; unmatched OA cohort, n=1222)

Figure 2. Patient Identification



[a]Patients were categorized into the AL and OA cohorts using a hierarchical approach. If patients had ≥2 AL claims on or after the initial diagnosis date, they were included in the AL cohort; otherwise, patients were included in the OA cohort if they had ≥2 OA claims on or after the initial diagnosis date. [b]Maintaining patients with schizophrenia on treatment can be a clinical challenge. At least 2 claims were required to examine outcomes in the subset of patients across both treatment cohorts who may be more likely to benefit from treatment.
AL, aripiprazole lauroxil; ICD-10-CM, *International Classification of Diseases, Tenth Revision, Clinical Modification*; IP, inpatient; LAI, long-acting injectable; OA, oral aripiprazole; OP, outpatient.

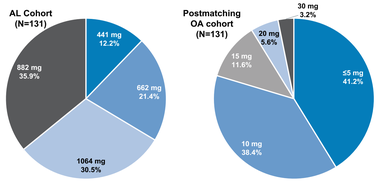
Table 1. Patient Demographics and Baseline Clinical Characteristics Before Propensity Score Matching

Characteristics	AL Cohort (n=131)	OA Cohort (n=1222)	*P* Value
Age at index, mean (SD), years	27.2 (6.4)	27.2 (6.7)	0.97
Sex, female, n (%)	51 (38.9)	575 (47.1)	0.08
Year of index, n (%)			0.010
2017	16 (12.2)	198 (16.2)	
2018	19 (14.5)	258 (21.1)	
2019	26 (19.9)	302 (24.8)	
2020	48 (36.6)	289 (23.6)	
2021	22 (16.8)	175 (14.3)	
Payer type, n (%)			0.001
Commercial	17 (13.0)	313 (25.6)	
Medicaid	114 (87.0)	909 (74.4)	
CCI, mean (SD)	0.51 (1.0)	0.53 (1.1)	0.82
CCI category, 3+, n (%)	8 (6.1)	71 (5.8)	
Treatment history,[a] n (%)			
Typical oral antipsychotic	21 (16.0)	121 (9.9)	0.03
Atypical oral antipsychotic	104 (79.4)	720 (58.9)	<0.001
Oral aripiprazole	76 (58.0)	0	
Mood stabilizer	53 (40.5)	499 (40.8)	0.93
Antidepressant	74 (56.5)	832 (68.1)	0.007
Anticholinergic	31 (23.7)	250 (20.5)	0.39
Sedative/hypnotic	10 (7.6)	114 (9.3)	0.52
Antianxiety mediation	59 (45.0)	548 (44.8)	0.97
Stimulant/ADHD medication	31 (23.7)	325 (26.6)	0.47

[a]Patients with ≥1 pharmacy claim during the 12-month baseline period.
ADHD, attention-deficit/hyperactivity disorder; AL, aripiprazole lauroxil; CCI, Charlson Comorbidity Index; OA, oral aripiprazole.

- Successful balancing of groups was achieved (standardized mean differences for all covariates <0.10) through propensity score matching with a 1:1 ratio

Figure 3. Index Prescription Dose



AL, aripiprazole lauroxil; OA, oral aripiprazole.

- Among early-in-illness patients, the AL cohort had significantly higher adherence and significantly longer persistence with their medication compared with those in the matched OA cohort (**Table 2**)
- During 12 months of follow-up, fewer patients in the AL cohort discontinued treatment compared with patients in the matched OA cohort

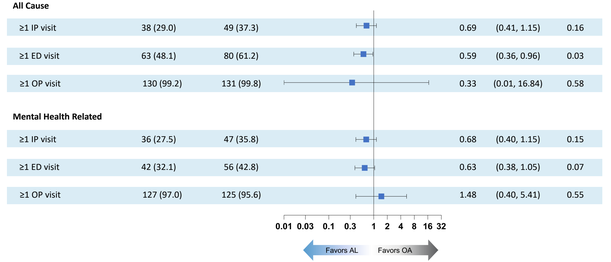
Table 2. Treatment Patterns Among Matched Early-in-Illness Patient Cohorts

12-Month follow-up treatment patterns	AL Cohort (n=131)	OA Cohort (n=131)
Persistence, median (Q1, Q3)[a]	256 (141, 365)	123 (60, 298)
HR (95% CI) for nonpersistence, *P*[b]	0.5 (0.38, 0.64), <0.0001	
Switching, n (%)[c]	29 (22.1)	28 (21.1)
To oral antipsychotic	27 (20.6)	19 (14.6)
To LAI antipsychotic	2 (1.5)	9 (6.5)
PDC, mean (SD)[d]	0.69 (0.27)	0.47 (0.22)
Adherence (PDC ≥ 0.80), n (%)	58 (44.3)	27 (20.7)
OR (95% CI), *P*[b]	3.0 (1.76, 5.24), <0.0001	
Discontinuation, n (%)[e]	73 (55.7)	98 (75.1)

[a]Persistence was defined as number of days the from index date to date of first discontinuation or end of the 1-year follow-up period, whichever occurred first. [b]Reference = OA. [c]Switching was defined as the presence of a claim for antipsychotic medication other than that initiated at index within the 60-day maximum allowable gap period after the date of discontinuation. [d]PDC was calculated as number of available days of index therapy divided by 365. [e]Discontinuation was defined as a continuous gap of ≥60 days without a claim for the index prescription following the therapeutic window for AL or after the previous claim's days' supply for OA.
AL, aripiprazole lauroxil; HR, hazard ratio; LAI, long-acting injectable; OA, oral aripiprazole; OR, odds ratio; PDC, proportion of days covered, Qn, quartile number.

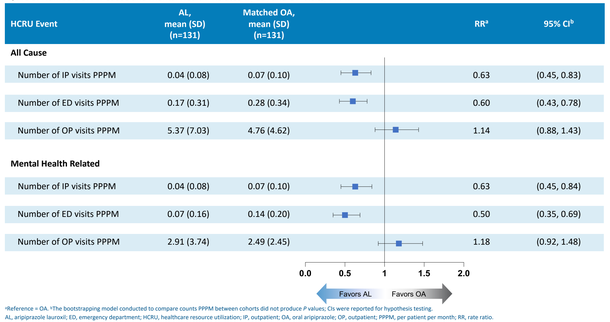
- The odds of having ≥1 all-cause ED visit were significantly lower for patients who initiated AL (**Figure 4**)
- Numbers of all-cause and mental health–related IP and ED visits PPPM were significantly lower in the AL cohort vs matched OA cohort (**Figure 5**)
- OP utilization did not differ between the matched cohorts

Figure 4. All-Cause and Mental Health–Related IP, ED, and OP Visits



[a]Reference = OA.
AL, aripiprazole lauroxil; ED, emergency department; HCRU, healthcare resource utilization; IP, inpatient; OA, oral aripiprazole; OP, outpatient; OR, odds ratio.

Figure 5. Numbers of All-Cause and Mental Health–Related IP, ED, and OP Visits, PPPM



[a]Reference = OA. [b]The bootstrapping model conducted to compare counts PPPM between cohorts did not produce *P* values; CIs were reported for hypothesis testing.
AL, aripiprazole lauroxil; ED, emergency department; HCRU, healthcare resource utilization; IP, inpatient; OA, oral aripiprazole; OP, outpatient; PPPM, per patient per month; RR, rate ratio.

LIMITATIONS

- The first diagnosis of schizophrenia captured in this database may not have been the patient's true initial diagnosis; age was restricted to increase the likelihood of patients included in the early-in-illness population being truly early in their illness
- Requiring ≥2 claims of AL and OA may have increased estimates of adherence and persistence; however, both cohorts had the same requirement
- Claims related to schizophrenia and its treatment may not have been captured accurately or completely, which could have led to inaccurate reports of treatment patterns and an underestimation of HCRU

CONCLUSIONS

- In this real-world study, early-in-illness patients with schizophrenia initiating AL were more likely to be adherent to treatment and had longer medication persistence compared with matched patients initiating OA
- Initiating AL vs OA was associated with significantly reduced odds of all-cause ED visits
- All-cause and mental health–related IP admissions and ED visits PPPM were significantly reduced among early-in-illness patients initiating AL vs OA, whereas the numbers of visits in OP settings were similar between cohorts
- Future investigations exploring whether improvements in treatment patterns and reductions in acute HCRU early in schizophrenia are associated with better long-term outcomes and reduced economic burden are warranted

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DISCLOSURES

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ABB, **CL**, **ZW**, and **ESN** have nothing to disclose
RG, **MJD**, and **LNS** are or were employees of Alkermes, Inc., and may own stock/options in the company

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