Comparisons of 30-day Readmission Rates in Patients with Schizophrenia Receiving Long-acting Injectable Antipsychotics during Hospitalization

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Introduction

- Schizophrenia affects approximately 1.1% or 2.7 million adults in the United States.[1]
- Persons hospitalized for schizophrenia have among the highest 30-day readmission rates.[2]
- Long-acting injectable antipsychotics (LAIs) have shown superiority over oral antipsychotics in preventing hospitalizations and readmissions among patients with schizophrenia.[3,4,5]
- We found no studies about the impact of using one LAI versus another on hospital readmissions among patients hospitalized for schizophrenia.

Objective

To explore the impact of different long-acting injectable antipsychotics (LAIs) on reducing 30-day hospital readmission rates in patients with schizophrenia following their index hospitalization.

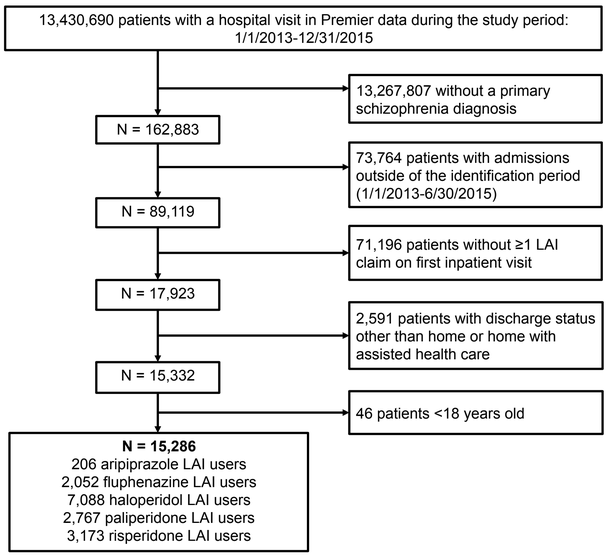
Methods

- Retrospective cohort study using the Premier Perspective Database™
- Patient identification
  - Hospitalized patients with primary diagnosis for schizophrenia 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
  - 30-day all-cause and psychiatric readmissions
- Statistical analysis
  - Chi-squared or Fisher's exact tests for dichotomous variables, and independent t-tests or Wilcoxon rank-sum tests used for continuous variables.
  - Logistic regression conducted to examine the association between LAIs and risks of having 30-day all-cause and psychiatric-related readmissions.
  - Models adjusted for patient demographic and clinical characteristics.

Results

- Of the identified 89,119 hospitalized patients with schizophrenia, 15,286 (17.2%) were treated with LAIs: aripiprazole (n=206), fluphenazine (n=2,052), haloperidol (n=7,088), paliperidone (n=2,767), or risperidone (n=3,173) (Figure 1).
- The mean (SD) age of the population of LAI users was 40.49 (13.82) years old.
  - The aripiprazole cohort was the youngest (Table 1).
- The unadjusted 30-day readmission rates were lowest in the aripiprazole cohort (all-cause: 9.7%; psychiatric-related: 8.7%), followed by haloperidol, paliperidone, risperidone, and fluphenazine (Figure 2).
  - Differences were not statistically significant.
- With aripiprazole as the reference group and adjusting for covariates, the risks of having all-cause and psychiatric-related readmissions within 30 days was higher in fluphenazine, haloperidol, paliperidone, and risperidone, although the differences remained statistically insignificant (Table 2).

Figure 1. Patient Identification



Results (cont'd)

Table 1. Patient Characteristics

	Aripiprazole N = 206; 1.3%	Fluphenazine N = 2,052; 13.4%	Haloperidol N = 7,088; 46.4%	Paliperidone N = 2,767; 18.1%	Risperidone N = 3,173; 20.8%	All N = 15,286	P Value
Demographics							
Age, year, mean (SD)	37.29 (14.40)	43.22 (13.43)	40.38 (13.64)	38.88 (13.65)	40.58 (14.30)	40.49 (13.82)	<0.0001
Female, n (%)	76 (36.89)	795 (38.74)	2,634 (37.16)	1,005 (36.32)	1,188 (37.44)	5,698 (37.28)	0.5483
Race, n (%)							<0.0001
White	99 (48.06)	651 (31.73)	1,893 (26.71)	1,117 (40.37)	1,181 (37.22)	4,941 (32.32)	
Black	84 (40.78)	784 (38.21)	2,715 (38.30)	968 (34.98)	1,333 (42.01)	5,884 (38.49)	
Other	23 (11.17)	617 (30.07)	2,480 (34.99)	682 (24.65)	659 (20.77)	4,461 (29.18)	
Comorbidities							
CCI[a], mean (SD)	0.35 (0.68)	0.48 (0.85)	0.42 (0.81)	0.36 (0.73)	0.39 (0.75)	0.41 (0.79)	<0.0001
Psychiatric, n (%)	144 (69.90)	1,403 (68.37)	4,834 (68.20)	1,904 (68.81)	2,056 (64.80)	10,341 (67.65)	0.0038
Depression	25 (12.14)	145 (7.07)	457 (6.45)	275 (9.94)	233 (7.34)	1,135 (7.43)	<0.0001
Anxiety	38 (18.45)	206 (10.04)	710 (10.02)	329 (11.89)	321 (10.12)	1,604 (10.49)	0.0002
Personality disorder	11 (5.34)	147 (7.16)	537 (7.58)	199 (7.19)	253 (7.97)	1,147 (7.50)	0.5279
Substance abuse disorders	105 (50.97)	1,153 (56.19)	4,001 (56.45)	1,480 (53.49)	1,610 (50.74)	8,349 (54.62)	<0.0001
Bipolar	24 (11.65)	318 (15.50)	872 (12.30)	367 (13.26)	396 (12.48)	1,977 (12.93)	0.0036
Somatic[b], n (%)	85 (41.26)	1,013 (49.37)	3,085 (43.52)	1,147 (41.45)	1,350 (42.55)	6,680 (43.70)	<0.0001

[a] Charlson comorbidity index.
[b] Somatic comorbidities included obesity, diabetes, hyperlipidemia, and hypertension.

Figure 2. Unadjusted 30-day Readmission Rates

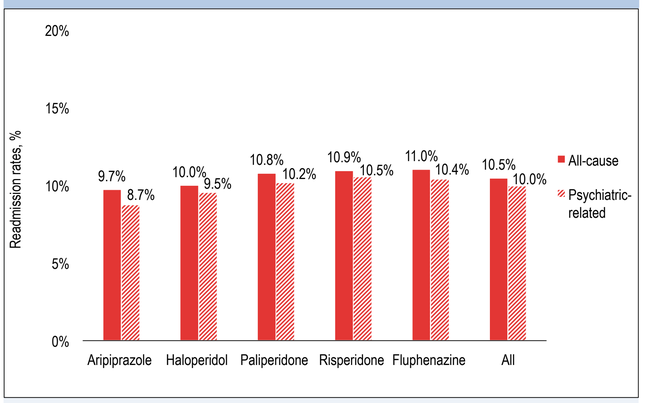


Table 2. Adjusted[a] 30-day Readmission Risk

	All-cause OR (95% CI)	Psychiatric-related OR (95% CI)
LAIs (Ref: Aripiprazole)		
Fluphenazine	1.26 (0.78 – 2.05)	1.34 (0.81 – 2.21)
Haloperidol	1.14 (0.71 – 1.83)	1.22 (0.74 – 1.99)
Paliperidone	1.18 (0.73 – 1.90)	1.24 (0.75 – 2.04)
Risperidone	1.19 (0.74 – 1.91)	1.28 (0.78 – 2.10)

[a] Adjusted for age groups, gender, race, marital status, Charlson comorbidity score, and having any psychiatric comorbidity at baseline.

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. Future studies with larger sample sizes are warranted to confirm findings.

Conclusions

- To our knowledge, this real-world study is the first to examine 30-day readmission rates among hospitalized schizophrenia patients treated with different LAIs.
- 30-day readmission rates were relatively low and statistically equivalent across the different LAIs.
- Compared with those treated with haloperidol, paliperidone, risperidone, and fluphenazine LAIs, patients treated with aripiprazole LAI had a numerically lower risk of being readmitted within 30 days, although the differences were not statistically significant.

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