Medication Adherence and Discontinuation in Medicaid Patients with Schizophrenia Who Initiated a Long-Acting Injectable Antipsychotic Versus Those Who Changed to a Different Oral Antipsychotic Monotherapy

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Introduction

- Medicaid is the predominant insurance program for the approximately 2.7 million adults with schizophrenia in the US.[1,2]
- Medication non-adherence is associated with greater risks of relapse of symptoms and repeated hospitalizations,[3,4] but a large pragmatic trial found that 74% of patients on oral antipsychotics discontinued treatment within 18 months.[5]
- Long-acting injectable antipsychotics (LAIs) may be able to improve medication adherence.
- Current studies of LAI adherence either had small sample sizes[6,7] or did not include all recently FDA approved LAIs.

Objective

To compare medication adherence and discontinuation in patients with schizophrenia who initiated an LAI to those who changed to a different oral antipsychotic monotherapy.

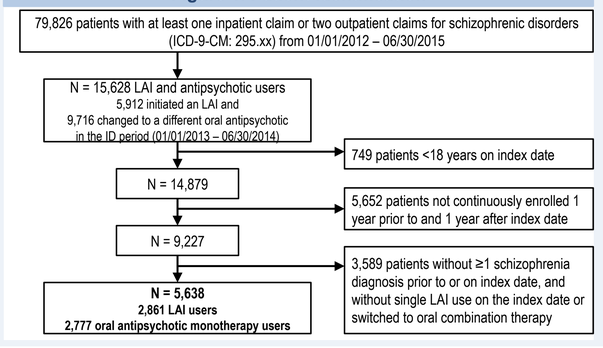
Methods

- Longitudinal cohort study using the Truven MarketScan® Medicaid Database
- Patient identification:
  - Schizophrenia claim (existing or newly diagnosed) between 01/01/2012 and 06/30/2015
  - LAI cohort
    - Initiated an LAI during the ID period (01/01/2013 to 06/30/2014)
    - Index date: first LAI use
    - No index LAI use 1 year prior to the index date (use of a different LAI was allowed)
  - Oral cohort
    - Schizophrenia patients who changed to a different oral antipsychotic monotherapy
    - Index date: date of change
  - Additional inclusion criteria
    - Schizophrenia diagnosis before index date
    - 1-year pre-index (baseline) continuous enrollment
    - 1-year post-index continuous enrollment
  - Exclusion criteria
    - ≤17 years old on index date
  - Patients followed for variable period until disenrollment or study end
- Medication adherence reported as proportion of days covered (PDC) during 1-year follow-up
  - PDC = number of days when index medication was available / 365 days
- Discontinuation defined as switch or gap of ≥60 days
- Statistical analysis:
  - A general linear regression model used to estimate medication adherence
  - A Kaplan-Meier Curve and a Cox regression model used to estimate time to discontinuation and risk of discontinuation
  - All models adjusted for patient demographic and clinical characteristics, baseline medication, and baseline emergency department (ED) visits or hospitalizations

Results

- 2,861 (50.7%) LAI initiators and 2,777 (49.3%) oral monotherapy users were identified (Figure 1).
- Compared with oral users, LAI initiators were younger [mean (SD) LAI vs. oral: 39.9 (13.2) vs. 42.0 (13.1)]. A higher percentage of LAI initiators were male (56.7% vs. 45.0%) and African American (57.7% vs. 41.3%) (Table 1).
- LAI initiators had lower psychiatric and somatic comorbid disease burden than oral users (76.5% vs. 86.3% and 56.6% vs. 65.1%, respectively; p<0.001 for both), and less ED or inpatient utilization (66.8% vs. 74.1%; p<0.001) during the baseline period (Table 1).
- Adjusting for covariates, LAI initiators had better medication adherence than oral users (adjusted PDC mean: 0.55 vs. 0.50; p<0.001) (Table 2).
- Median time to discontinue index LAI was 196 days vs. 123 days for the oral cohort (p<0.001) (Figure 2).
- Oral cohort discontinued treatment at a higher rate than LAI cohort (hazard ratio: 1.20; p<0.001) (Table 2).

Figure 1. Patient Identification



Results (cont'd)

Table 1. Patient Characteristics

	LAIs N=2,861; 50.7%	Oral Monotherapy N=2,777; 49.3%	All N=5,638	*P* Value
Demographics				
Age in years, mean (SD)	39.9 (13.2)	42.0 (13.1)	40.9 (13.2)	<0.001
Female, n (%)	1,238 (43.3)	1,526 (55.0)	2,764 (49.0)	<0.001
Race, n (%)				
White	851 (29.7)	1,149 (41.4)	2,000 (35.5)	<0.001
African American	1,650 (57.7)	1,146 (41.3)	2,796 (49.6)	
Other	360 (12.6)	482 (17.4)	842 (14.9)	
Comorbidities				
Charlson comorbidity index, mean (SD)	1.1 (1.9)	1.7 (2.3)	1.4 (2.1)	<0.001
No. chronic conditions, mean (SD)	3.5 (2.3)	4.4 (2.4)	4.0 (2.4)	<0.001
Psychiatric comorbidities, n (%)	2,190 (76.5)	2,397 (86.3)	4,587 (81.4)	<0.001
Depression	1,300 (45.4)	1,641 (59.1)	2,941 (52.2)	<0.001
Anxiety	1,019 (35.6)	1,352 (48.7)	2,371 (42.1)	<0.001
Personality disorder	399 (13.9)	395 (14.2)	794 (14.1)	0.784
Substance abuse disorders	1,505 (52.6)	1,574 (56.7)	3,079 (54.6)	0.002
Bipolar disorders	1,028 (35.9)	1,250 (45.0)	2,278 (40.4)	<0.001
Somatic comorbidities[a], n (%)	1,618 (56.6)	1,808 (65.1)	3,426 (60.8)	<0.001
Baseline[b] medication and healthcare service use				
Use of any oral antipsychotic medication, n (%)	2,277 (79.6)	2,777 (100.0)	5,054 (89.6)	n/a
Any use of selected psychiatric medications[c], n (%)	1,895 (66.2)	2,342 (84.3)	4,237 (75.2)	<0.001
Somatic medications, n (%)	1,243 (43.4)	1,510 (54.4)	2,753 (48.8)	<0.001
Any inpatient hospitalization or ED visit, n (%)	1,910 (66.8)	2,058 (74.1)	3,968 (70.4)	<0.001

[a] Obesity, diabetes mellitus, hyperlipidemia, hypertension. [b] One year prior to the index date.
[c] Antidepressant, anti-anxiety medications, sedatives or hypnotics.

Figure 2. Time to Discontinuation of Index Treatment

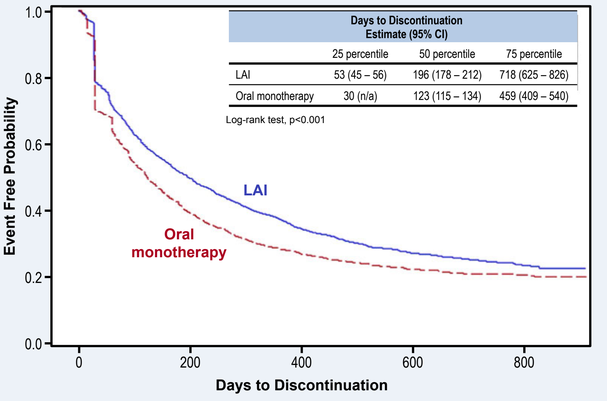


Table 2. Multivariate[a] Results: Risk of Discontinuation and Adjusted Medication Adherence (PDC) Estimates

	Risk of discontinuation of index treatment in the 1-year follow-up period[b]		Index treatment PDC in the 1-year follow-up period[c,d]	
	HR (95% CI)	*P* Value	Estimate (95% CI)	*P* Value
Oral monotherapy (Ref: LAI)	1.20 (1.13 – 1.28)	<0.001	-0.05 (-0.08 – -0.03)	<0.001

[a] Adjusted for age groups, gender, race (White vs. non-White), Charlson comorbidity index, number of chronic conditions, any baseline inpatient hospitalization or ED visit, depression, anxiety, bipolar, any baseline psychiatric medication use, and any baseline somatic medication use.
[b] Cox regression model.
[c] General linear regression model.
[d] Adjusted mean (95% CI) PDC of index treatment in 1-year follow-up period: mono oral antipsychotic 0.499 (0.484 – 0.513); LAI 0.553 (0.539 – 0.567).

Limitations

- Clinical differences unmeasurable in this database may have been responsible for the choice of LAI vs. oral antipsychotics, and these differences may be responsible for some of the adherence advantages observed.
- Results may not be generalizable to non-Medicaid patient populations.

Conclusions

- Medicaid patients with schizophrenia initiating LAIs had better medication adherence and lower discontinuation risk than patients who changed to a different oral antipsychotic monotherapy.
- Payers and clinicians treating patients with schizophrenia should consider LAIs as treatment options for patients with known or suspected poor adherence.

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Disclosures: Greene is an employee of Otsuka Pharmaceutical Development and Commercialization, Inc., Princeton, NJ. Chang, Yan, and Broder are employees of Partnership for Health Analytic Research, LLC, Beverly Hills, CA. Hartry 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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