Lower Medical Cost Associated with Aripiprazole Once-Monthly Compared to Oral Atypical Antipsychotics in Patients with Schizophrenia

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Background

- Schizophrenia (SCZ) is associated with high economic burden - $156 billion in 2013 ($37.7 billion in direct costs)[1]
- Long-acting injectable antipsychotics (LAIs) have been shown to lower medical costs compared to oral atypical antipsychotics (OAAs)[2]
- Aripiprazole once-monthly (AOM 400) is one of the atypical LAIs approved for schizophrenia in adults and may improve adherence compared to oral antipsychotics[3]
- We aimed to expand on prior research by combining more recent data from multiple databases[2,4]

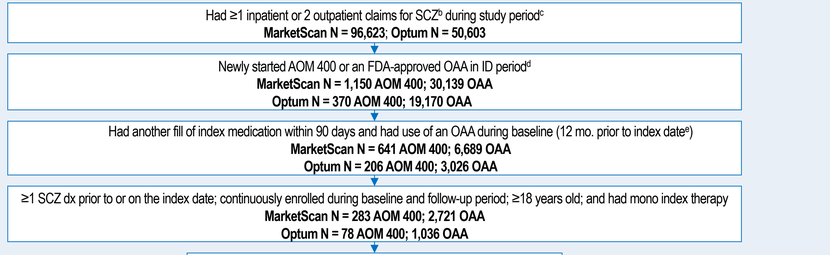
Objective

To compare medical and hospitalization costs in adult patients with SCZ newly initiating treatment with AOM 400 vs OAAs

Methods

- Retrospective cohort study using: (1) Truven Health MarketScan® Commercial (C), Medicare Supplemental (MS), and Multi-State Medicaid (M) Databases*; and (2) De-identified Optum® Clinformatics® Datamart
- Patient identification **(Figure 1)**

Figure 1. Patient identification[a]



AOM 400: aripiprazole once-monthly; dx: diagnosis; ID: identification: OAA: oral atypical antipsychotic; SCZ: schizophrenia. [a] Excluded: patients without an antipsychotic prescription during baseline; Medicare and Medicaid dual eligible; patients with no pharmacy coverage; no mental health coverage; or capitated plan in MarketScan M. [b] ICD-9-CM: 295.xx, excl. 295.4x and 295.7x; or ICD-10-CM: F20x, excl. F20.81x. [c] 1/1/13-9/30/17 for MarketScan C/ MS, and Optum; 1/1/13-6/30/17 for MarketScan M. [d] 1/1/14-9/30/16 MarketScan C/MS, and Optum; 1/1/14-6/30/16 for MarketScan M. [e] Date of the first of these two claims.

- Outcomes measures
  - All-cause hospitalization and medical costs (inpatient and outpatient services, excluding pharmacy costs)
- Statistical analysis
  - Linear regression model and a two-part model conducted to estimate all-cause medical costs and all-cause hospitalization costs, respectively
  - Initial covariates included baseline age, gender, insurance type, Charlson Comorbidity Index, any psychiatric comorbidities, hyperlipidemia, hypertension, and any ED visits, hospitalizations, antipsychotic use, psychiatric medication use, and non-psychiatric medication use; final models included statistically significant (p<0.05) covariates
  - Costs inflated to Y2017 USD using the medial care component of the Consumer Price Index, all analysis done with SAS© version 9.4

* MarketScan is a registered trademark of Truven Health Analytics, part of the IBM Watson Health business.

Results

- The final cohorts included 361 AOM 400 users, and 3,757 OAA users **(Table 1)**

Table 1. Baseline characteristics and healthcare utilization

	AOM 400 N = 361 (8.8%)	OAAs N = 3,757 (91.2%)	P Value
Age in years, mean (SD)	39.9 (14.7)	48.4 (16.2)	<0.001
Female, n (%)	156 (43.2)	1,919 (51.1)	0.004
Insurance type, n (%)			0.049
Medicaid	222 (61.5)	2,102 (55.9)	
Commercial	64 (17.7)	657 (17.5)	
Medicare Supplemental	75 (20.8)	998 (26.6)	
Comorbidities			
CCI, mean (SD)	1.0 (1.5)	1.8 (2.2)	<0.001
No. HCUP chronic conditions, mean (SD)	3.9 (2.3)	4.8 (2.4)	<0.001
Psychiatric comorbidities[a], n (%)	287 (79.5)	2,976 (79.2)	0.897
Non-psychiatric comorbidities[b], n (%)	225 (62.3)	2,709 (72.1)	<0.001
Medication and healthcare service use			
Inpatient hospitalizations, n (%)	204 (56.5)	1,957 (52.1)	0.108
Psychiatric medications[c], n (%)	283 (78.4)	3,216 (85.6)	<0.001
Non-psychiatric medications[d], n (%)	150 (41.6)	2,013 (53.6)	<0.001

AOM 400: aripiprazole once-monthly; CCI: Charlson Comorbidity Index; HCUP: Healthcare Cost and Utilization Project; OAAs: oral atypical antipsychotics. [a] Bipolar disorder, depression, anxiety, personality disorder, or substance abuse disorders. [b] Obesity, diabetes mellitus type 2, hyperlipidemia, hypertension. [c] Mood stabilizer, antidepressants, anti-anxiety medications, sedatives or hypnotics. [d] Anti-diabetic, lipid-lowering, and anti-hypertensive medications.

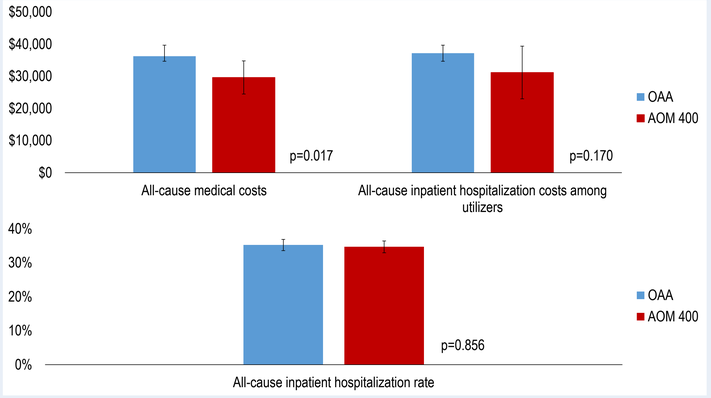
- AOM 400 users had lower unadjusted mean (SD) all-cause medical costs compared with OAA users [$26,708 ($25,800) vs $36,530 ($53,642); p<0.001], as well as lower costs of hospitalizations [$10,834 ($22,896) vs $13,722 ($34,855); p<0.001]
- After adjusting for baseline differences, mean (95% confidence interval) all-cause medical costs remained statistically significantly lower in AOM 400 users than OAA users **(Table 2, Figure 2)**
- There was no statistically significant difference in adjusted all-cause hospitalization costs between AOM 400 and OAA users **(Table 2, Figure 2)**

Table 2. Adjusted estimates of medical costs and inpatient hospitalization costs among users, and inpatient hospitalization

Parameter	Linear Regression Model All-Cause Medical[c] Costs		Logistic Regression Model Any All-Cause Inpatient Hospitalizations		Linear Regression Model All-Cause Inpatient Hospitalization Costs[a] Among Utilizers	
	Estimate	P Value	OR	P Value	Estimate	P Value
Insurance Type						
Medicaid vs. Commercial	$15,586	<0.001	--	ns[d]	--	ns[d]
Medicare vs. Commercial	--	ns[d]	--	ns[d]	--	ns[d]
Charlson Comorbidity Index	$4,246	<0.001	1.10	<0.001	--	ns[d]
Hyperlipidemia (Y vs. N)	--	ns[d]	1.16	0.049	$8,441	<0.001
Any use of clozapine in baseline or on index date (Y vs. N)	$14,657	<0.001	--	ns[d]	--	ns[d]
Any baseline ED visits (Y vs. N)	$3,742	0.024	1.48	<0.001	--	ns[d]
Any baseline inpatient hospitalization (Y vs. N)	$15,703	<0.001	3.05	<0.001	$10,855	<0.001
Baseline psychiatric medications[a] use (Y vs. N)	$4,878	0.027	--	ns[d]	--	ns[d]
Baseline non-psychiatric medications[b] use (Y vs. N)	$5,733	<0.001	--	ns[d]	--	ns[d]
OAAs vs. AOM 400	$6,610	0.017	1.02	0.856	$5,999	0.170

AOM 400: aripiprazole once-monthly; ED: emergency department; ns: not significant; OAAs: oral atypical antipsychotics. [a] Mood stabilizer, antidepressant, anti-anxiety medications, sedatives, or hypnotics. [b] Anti-diabetic, lipid-lowering, or anti-hypertensive. [c] Total inpatient and outpatient service costs, excl. pharmacy costs. [d] Included in initial model but excluded from final one because variable was not statistically significantly associated with the outcome (p≥0.05). [e] Including costs occurred in a hospital, skilled nursing facility, or nursing home care.

Figure 2. Adjusted costs and hospitalization rate



AOM 400: aripiprazole once-monthly; OAAs: oral atypical antipsychotics. [a] Including costs occurred in a hospital, skilled nursing facility, or nursing home care. [b] Total inpatient and outpatient service costs, excl. pharmacy costs.

Conclusion

- In a real-world setting, adult patients with schizophrenia who initiated aripiprazole once-monthly (AOM 400) had statistically significantly lower all-cause medical costs than oral atypical antipsychotic initiators
- Payers may wish to assess their own costs when assessing the antipsychotic class for formulary placement
- Limitations
  - Claims are meant for reimbursement, not research, so misclassification is possible. Additionally, claims indicate a prescription was filled, not necessarily that the medication was taken (or taken as prescribed)
  - We controlled for observable demographic and clinical differences but due to data limitations were unable to control for the unobservable clinical factors that may have influenced outcomes

References

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