FACTORS ASSOCIATED WITH THE USE OF SECOND-GENERATION ANTIPSYCHOTICS IN PATIENTS WITH AUTISM SPECTRUM DISORDER

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BACKGROUND

- Autism Spectrum Disorder(ASD) encompasses a spectrum of neurodevelopmental disorders characterized by multifaceted origin, impacting 1 in 36 children and 2.2% adults.[1]
- Despite assertions about potential curative intent, currently there is no definitive treatment for ASD.[2]
- Pharmacological treatment in addition to behavioral therapy, aim to address various symptoms of ASD like self injury and aggression.[3]
- Antipsychotics are often recommended due to their ability to control aggression and hyperactive behavior.
- Risperidone and aripiprazole are the second-generation antipsychotics (SGA) approved by FDA for the treatment of ASD associated irritability.[4]
- Although several studies have provided the factors associated with the use of SGA in various psychiatric disorders, there is a paucity of studies to evaluate the same in ASD patients.

OBJECTIVE

This study aims to assess the factors associated with the utilization of second-generation antipsychotics in patients with ASD.

METHODS

- ***Data sources***: This retrospective, cross-sectional study used the Agency for Healthcare Research and Quality (AHRQ) commercial claims data from the year 2016.
- It is administrative data, which contains information on patient demographics, enrollment data, inpatient and outpatient services, and prescription drug claims.
- ***Study population***: The study includes individuals of all age groups with a diagnosis of ASD, identified using the ICD 10 code 'F84'.
- ASD patients who received SGA prescriptions were compared with those who did not receive SGA.
- The initial prescription fill date is considered the index date, and the baseline characteristics associated with SGA utilization were identified during the three months preceding the index date.
- Patients who were continuously enrolled for 9 months during the 1-year study period were included in the study cohort.
- ***Analyses***: Chi-Square test and logistic regression were used to identify the individual sociodemographic characteristics associated with SGA utilization among ASD patients.
- Analysis was performed by using SAS version 9.4.

RESULTS

Descriptive statistics presented in **Table 1** show that:

- A total of 5580 diagnosed with ASD were identified, with 805 (14%) individuals receiving SGA, while 4775 (86%) did not receive SGA.
- A greater percentage of individuals belonged to the 0-17 age group, specifically 81.8% in the non-SGA group and 65.59% in the SGA group.

The logistic regression analysis presented in **Table 2** revealed that:

- Females demonstrated a lower likelihood of using SGA than males (OR=0.76, 95% CI: 0.66-0.94).
- Similarly, patients with coexisting epilepsy had lower odds of receiving SGA compared to those without epilepsy (OR=0.25, 95% CI: 0.16-0.40).
- Regarding medication use, patients taking SSRIs had substantially higher odds of being prescribed SGA (OR=7.70, 95% CI: 6.34-9.49).
- Additionally, patients using stimulants (OR=2.48, 95% CI: 1.93-3.18), anxiolytics (OR=2.91, 95% CI: 1.43-5.89), and mood stabilizers (OR=12.86, 95% CI: 9.81-16.85) also exhibited increased odds of being prescribed SGA.

Table 1. Descriptive statistics of patients with ASD who received SGA medication in 2016 AHRQ commercial claims data

Variables	Patients with eligibility (N=5580)				P value[1]
	Without SGA (4775, 86%)		With SGA (805, 14%)		
	Frequency	%	Frequency	%	
Age					
0-17	3906	81.8	528	65.59	<.0001
18-34	781	16.36	260	32.3	
35-64	88	1.84	17	2.11	
Sex					
Female	1132	23.71	184	22.86	0.60
Male	3643	76.29	621	77.14	
Comorbidities					
ADHD[2]					
No	4022	84.23	592	73.54	<.0001
Yes	753	15.77	213	26.46	
MDD					
No	4594	96.21	739	91.8	<.0001
Yes	181	3.79	66	8.2	
Anxiety disorder					
No	4287	89.78	641	79.63	<.0001
Yes	488	10.22	164	20.37	
Epilepsy					
No	4435	92.88	774	96.15	0.0002
Yes	340	7.12	31	3.85	
Comedications					
SSRI					
No	4369	91.5	394	48.94	<.0001
Yes	406	8.5	411	51.06	
stimulants					
No	4436	92.9	586	72.8	<.0001
Yes	339	7.1	219	27.2	
Anxiolytics					
No	4748	99.43	780	96.89	<.0001
yes	27	0.57	25	3.11	
Mood stabilizers					
No	4603	96.4	547	67.95	<.0001
yes	172	3.6	258	32.05	

1 p-value: chi square test & < 0.05 was considered significant

Table 2. Logistic regression analysis showing the association between predictors and SGA medication use

Dependent variable		Receiving SGA		
Parameter	Ref.	Adjusted OR	95%CI	P value[1]
Age (0-17)	18-34	0.55	0.45-0.68	0.16
Age (35-64)		0.50	0.26-0.99	0.25
Gender	Male	0.76	0.66-0.94	0.01
ADHD[2]	No	1.23	0.98-1.55	0.07
MDD[3]	No	1.16	0.8-1.68	0.43
Anxiety disorder	No	1.05	0.81-1.35	0.71
Epilepsy	No	0.25	0.16-0.40	<.0001
SSRI[4]	No	7.70	6.34-9.49	<.0001
stimulants	No	2.48	1.93-3.18	<.0001
Anxiolytics	No	2.91	1.43-5.89	0.003
Mood stabilizers	No	12.86	9.81-16.85	<.0001

1 p-value < 0.05 was considered significant

2 ADHD- Attention Deficit Hyperactivity Disorder 3MDD – Major Depressive Disorder 4SSRI – Selective Serotonin Receptor Inhibitors

CONCLUSION

- The study found that ASD patients who received SGA are often prescribed other concurrent psychotropic medications for depression, anxiety, and ADHD.
- The utilization pattern could be probably due to shared symptoms between ASD and common mental disorders in children.
- Given that the majority of the study cohort was under 18 and the safety concerns of using SGA in minors, further research is needed for comprehensive adverse drug event assessments among youth with ASD.

LIMITATIONS

- The data includes commercially insured patients, and hence, the generalizability of the results may be limited to patients of similar characteristics.
- Lack of certain sociodemographic features like race/ethnicity, education level of patients and parents, and clinical parameters like BMI.
- Specific information on the type and severity of ASD and dosage of SGA were not available.

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