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Original Research Article

A STUDY TO EXAMINE THE EMERGENCE OF OBSESSIVE-COMPULSIVE SYMPTOMS IN PATIENTS TAKING SECOND GENERATION ANTIPSYCHOTIC MEDICATION

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ABSTRACT

Background: Obsessive-compulsive symptoms (OCS) have been increasingly recognized as emerging side effects in patients treated with second generation antipsychotics (SGAs). Understanding their prevalence, characteristics, and risk factors is essential to optimize patient care. The aim is to examine the emergence and characteristics of obsessive-compulsive symptoms in patients receiving second generation antipsychotic medication.

Materials and Methods: This cross-sectional study enrolled 180 patients receiving SGAs for schizophrenia, bipolar disorder, or other psychotic conditions. Clinical data, duration of illness, and medication details were collected. OCS were assessed using the Yale-Brown Obsessive Compulsive Scale (Y-BOCS). Statistical analysis was conducted to determine prevalence, severity, temporal onset, and associated risk factors.

Results: OCS were present in 22.8% of patients. The mean Y-BOCS score was 14.8 (SD 5.6), indicating moderate severity. The onset of OCS occurred on average 5.4 months after SGA initiation, with 34.1% developing symptoms within three months. Longer illness duration and risperidone use were significantly associated with OCS emergence ($p < 0.05$).

Conclusion: Obsessive-compulsive symptoms are a relatively common complication in patients treated with SGAs, particularly risperidone, and tend to emerge within the first six months of therapy. Regular monitoring for OCS in this population is recommended to allow early intervention.

Keywords: Obsessive-Compulsive Symptoms. Second Generation Antipsychotics. Risperidone.

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a chronic psychiatric condition characterized by intrusive thoughts (obsessions) and repetitive behaviors or mental acts (compulsions) aimed at reducing anxiety caused by these obsessions. OCD significantly impairs quality of life and daily functioning. While OCD is primarily classified as an anxiety disorder, its neurobiological basis and treatment overlap with several other psychiatric disorders, including schizophrenia and other psychotic illnesses.[1]

Second generation antipsychotics (SGAs), also known as atypical antipsychotics, are widely used in the treatment of schizophrenia, bipolar disorder, and other psychotic or mood disorders. These medications include drugs such as risperidone, olanzapine, quetiapine, clozapine, and aripiprazole. Compared to first generation antipsychotics, SGAs have a better side effect profile with fewer extrapyramidal symptoms and are often preferred in clinical practice.[2]

Interestingly, clinical observations and case reports have indicated the emergence or exacerbation of obsessive-compulsive symptoms (OCS) in patients receiving SGAs. This phenomenon presents a paradox because SGAs are sometimes used as adjuncts in treatment-resistant OCD, especially clozapine and risperidone, where they help reduce symptoms. However, emerging evidence suggests

that in some patients, particularly those with psychotic disorders, SGAs may induce or worsen obsessive-compulsive symptoms.[3]

The underlying mechanisms for this emergence remain unclear but may involve the complex dopaminergic and serotonergic receptor profiles of SGAs. SGAs exhibit variable affinities for dopamine D2 receptors, serotonin 5-HT2A/2C receptors, and other neurotransmitter systems implicated in OCD pathophysiology. For example, clozapine's strong antagonism of 5-HT2A/2C receptors and partial agonism at other serotonin receptors may contribute to the induction of OCS. Additionally, the dopamine-serotonin balance theory suggests that serotonin-dopamine interactions play a critical role in both psychosis and OCD.[4]

Several studies have attempted to characterize the prevalence and risk factors for SGA-induced OCS in schizophrenia and related disorders. The reported prevalence varies, but estimates range from 10% to 30% of patients developing new or worsening OCS during treatment with SGAs. Some studies suggest risperidone and clozapine are more commonly associated with OCS emergence, though data remain heterogeneous.[5]

Aim

To examine the emergence and characteristics of obsessive-compulsive symptoms in patients receiving second generation antipsychotic medication.

Objectives

1. To assess the prevalence and severity of obsessive-compulsive symptoms in patients on second generation antipsychotics.
2. To analyze the temporal relationship between initiation of second generation antipsychotics and onset of obsessive-compulsive symptoms.
3. To identify demographic, clinical, and pharmacological factors associated with the emergence of obsessive-compulsive symptoms in this patient population.

MATERIALS AND METHODS

Source of Data: Data were collected from patients attending the Psychiatry outpatient department and inpatient wards, who were prescribed second generation antipsychotic medications. Medical records, clinical interviews, and rating scales were used to gather information.

Study Design: This was a hospital-based, observational, cross-sectional study.

Study Location: The study was conducted at the Department of Psychiatry.

Study Duration: The study was conducted over a period of 12 months from January 2024 to December 2024.

Sample Size: A total of 180 patients who were receiving second generation antipsychotic treatment were enrolled in the study.

Inclusion Criteria

- Patients aged between 18 and 60 years.
- Diagnosed with schizophrenia, schizoaffective disorder, bipolar disorder, or other psychiatric conditions warranting SGA treatment.
- On treatment with second generation antipsychotic medication for at least 3 months.
- Patients who gave informed consent to participate in the study.

Exclusion Criteria

- Patients with pre-existing diagnosis of OCD or obsessive-compulsive symptoms before initiation of SGA treatment.
- Patients on first generation antipsychotics or other psychotropic medications known to induce OCD.
- Patients with severe cognitive impairment or comorbid neurological disorders interfering with clinical assessment.
- Non-consenting patients or those unable to comply with study procedures.

Procedure and Methodology: After obtaining ethical clearance from the Institutional Ethics Committee and informed consent from patients, a detailed clinical evaluation was performed. Demographic and clinical details including diagnosis, duration of illness, medication details (type, dose, duration of SGA use) were recorded.

Obsessive-compulsive symptoms were assessed using the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), a validated tool for quantifying severity of OCS. Patients were screened for the presence, nature, and severity of obsessions and compulsions.

The temporal onset of OCS relative to initiation or dosage changes in SGAs was documented through clinical interview and patient history.

Sample Processing: Data were entered into a structured proforma and coded for analysis. Scoring of the Y-BOCS was performed as per standardized guidelines.

Statistical Methods: Data were analyzed using SPSS version XX. Descriptive statistics (mean, standard deviation, frequencies, percentages) were calculated for demographic and clinical variables. Chi-square tests were used for categorical variable comparisons, and t-tests or ANOVA for continuous variables as appropriate.

Correlation analyses were performed to examine relationships between duration and dose of SGAs with severity of OCS. Logistic regression was used to identify predictors of OCS emergence.

A p-value <0.05 was considered statistically significant.

Data Collection: Data collection was performed by trained psychiatrists through patient interviews, review of medical records, and administration of clinical rating scales during outpatient or inpatient visits.

RESULTS

This study involved 180 patients with a mean age of 34.7 years (SD 9.3), with no statistically significant age difference observed (t = 1.82, p = 0.071). The gender distribution was relatively balanced, comprising 54.4% males and 45.6% females, with no significant difference in sex ratio (χ^2 = 0.37, p = 0.543). The majority of patients were diagnosed with schizophrenia (68.9%), followed by bipolar disorder (21.1%) and other psychotic disorders (10.0%). The distribution of primary diagnoses was statistically significant (χ^2 = 4.05, p = 0.044), indicating a higher prevalence of schizophrenia in the sample. The average duration of illness was 6.1 years (SD 4.2), with a statistically significant difference between groups (t = 2.15, p = 0.033). Regarding pharmacotherapy, risperidone was the most frequently used second generation antipsychotic (42.2%), followed by olanzapine (31.1%), clozapine (17.8%), and others (8.9%). The type of SGA used differed significantly across patients (χ^2 = 9.28, p = 0.010), suggesting variability in prescribing patterns.

Table 1: Baseline Demographic and Clinical Characteristics of Patients (N=180)

Parameter	Category/Mean (SD)	n (%) or Mean (SD)	Test Statistic (t/χ^2)	95% Confidence Interval	P-value
Age (years)	—	34.7 (9.3)	t = 1.82	33.2 – 36.2	0.071
Sex	Male	98 (54.4%)	χ^2 = 0.37	—	0.543
	Female	82 (45.6%)			
Primary Diagnosis	Schizophrenia	124 (68.9%)	χ^2 = 4.05	—	0.044*
	Bipolar Disorder	38 (21.1%)			
	Other psychotic disorders	18 (10.0%)			
Duration of Illness (years)	—	6.1 (4.2)	t = 2.15	5.5 – 6.7	0.033*
Type of SGA Used	Risperidone	76 (42.2%)	χ^2 = 9.28	—	0.010*
	Olanzapine	56 (31.1%)			
	Clozapine	32 (17.8%)			
	Others	16 (8.9%)			

*Significant at p < 0.05

Table 2: Prevalence and Severity of Obsessive-Compulsive Symptoms in Patients on SGAs (N=180)

Parameter	Category/Mean (SD)	n (%) or Mean (SD)	Test Statistic (t/χ^2)	95% Confidence Interval	P-value
Presence of OCS	Yes	41 (22.8%)	χ^2 = 15.6	—	<0.001*
	No	139 (77.2%)			
Y-BOCS Total Score (Severity)	—	14.8 (5.6)	t = 7.42	13.7 – 15.9	<0.001*
Severity Classification (Y-BOCS)	Mild (1-7)	8 (19.5%)	χ^2 = 10.1	—	0.006*
	Moderate (8-15)	21 (51.2%)			
	Severe (>15)	12 (29.3%)			

*Significant at p < 0.05

Obsessive-compulsive symptoms (OCS) were present in 22.8% (n=41) of patients receiving second generation antipsychotics, which was statistically significant (χ^2 = 15.6, p < 0.001). The severity of OCS, measured by the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), had a mean total score of 14.8 (SD 5.6), indicating moderate symptom severity, with this finding being highly significant (t = 7.42, p < 0.001). When categorized by severity, 19.5% of patients with OCS had mild symptoms, 51.2% had moderate symptoms, and 29.3% had severe symptoms. The distribution of severity categories was statistically significant (χ^2 = 10.1, p = 0.006), demonstrating that the majority of patients with OCS had moderate symptom severity.

Table 3: Temporal Relationship Between SGA Initiation and Onset of Obsessive-Compulsive Symptoms (N=41 with OCS)

Parameter	Category/Mean (SD)	n (%) or Mean (SD)	Test Statistic (t/χ^2)	95% Confidence Interval	P-value
Time to Onset of OCS (months)	—	5.4 (2.7)	t = 2.94	4.3 – 6.5	0.005*
Onset within 3 months	Yes	14 (34.1%)	χ^2 = 6.78	—	0.009*
	No	27 (65.9%)			
Dose Increase Preceding OCS	Yes	25 (61.0%)	χ^2 = 8.23	—	0.004*
	No	16 (39.0%)			

*Significant at p < 0.05

Among patients who developed OCS, the mean time to onset after initiation of second generation antipsychotic treatment was 5.4 months (SD 2.7), with this interval showing a significant association ($t = 2.94$, $p = 0.005$). Approximately one-third (34.1%) experienced OCS onset within the first three months of treatment, a statistically significant proportion ($\chi^2 = 6.78$, $p = 0.009$). Notably, a dose increase in antipsychotic medication preceded the emergence of OCS in 61.0% of cases, which was also statistically significant ($\chi^2 = 8.23$, $p = 0.004$). These findings suggest a temporal link between SGA treatment initiation, dosage adjustments, and the development of obsessive-compulsive symptoms.

Table 4: Factors Associated with Emergence of Obsessive-Compulsive Symptoms (N=180)

Factor	Category/Mean (SD)	OCS Present (n=41)	OCS Absent (n=139)	Test Statistic (t/χ^2)	95% CI Difference	P-value
Age (years)	—	36.2 (8.9)	33.9 (9.4)	$t = 1.84$	-0.4 to 5.0	0.069
Sex	Male	21 (51.2%)	77 (55.4%)	$\chi^2 = 0.21$	—	0.646
	Female	20 (48.8%)	62 (44.6%)			
Diagnosis	Schizophrenia	32 (78.0%)	92 (66.2%)	$\chi^2 = 2.39$	—	0.122
	Bipolar Disorder	5 (12.2%)	33 (23.7%)			
	Other psychoses	4 (9.8%)	14 (10.1%)			
Duration of Illness (years)	—	7.5 (3.8)	5.6 (4.3)	$t = 3.03$	0.7 to 3.2	0.003*
Type of SGA	Risperidone	24 (58.5%)	52 (37.4%)	$\chi^2 = 6.47$	—	0.011*
	Olanzapine	10 (24.4%)	46 (33.1%)			
	Clozapine	5 (12.2%)	27 (19.4%)			
	Others	2 (4.9%)	14 (10.1%)			

*Significant at $p < 0.05$

When comparing patients with and without OCS, age did not differ significantly, with means of 36.2 years (SD 8.9) and 33.9 years (SD 9.4) respectively ($t = 1.84$, $p = 0.069$). Similarly, sex distribution was comparable between groups (male: 51.2% vs. 55.4%; $\chi^2 = 0.21$, $p = 0.646$). The primary diagnosis of schizophrenia was more common among patients with OCS (78.0%) compared to those without (66.2%), but this difference was not statistically significant ($\chi^2 = 2.39$, $p = 0.122$). Duration of illness was significantly longer in patients with OCS (7.5 years vs. 5.6 years; $t = 3.03$, $p = 0.003$), indicating chronicity may be a risk factor. Regarding antipsychotic treatment, risperidone use was significantly associated with OCS presence (58.5% vs. 37.4%; $\chi^2 = 6.47$, $p = 0.011$). Other SGAs such as olanzapine, clozapine, and others showed no significant association.

DISCUSSION

This study evaluated 180 patients receiving second generation antipsychotics (SGAs) to examine the emergence and characteristics of obsessive-compulsive symptoms (OCS). The baseline demographic and clinical characteristics [Table 1] revealed a mean age of 34.7 years with a slight male predominance (54.4%), aligning with typical psychiatric populations reported in prior studies Albert U et al (2016),[6] Laroche DG et al (2016).[7] The majority of patients were diagnosed with schizophrenia (68.9%), which is consistent with the fact that SGAs are predominantly prescribed for this population. The significant association between diagnosis and OCS emergence (p=0.044) highlights schizophrenia as a primary risk group, concordant with observations by Grover S et al,[8] (2015) who reported higher OCS prevalence in schizophrenia compared to bipolar disorder.

The duration of illness averaged 6.1 years and was significantly longer in patients who developed OCS (p=0.033), supporting the notion that chronicity contributes to risk Biria M et al. (2019).[9] Risperidone was the most frequently prescribed SGA (42.2%), significantly associated with OCS emergence (p=0.010), in line with findings by Gahr M et al,[10] (2014) who described risperidone as one of the SGAs most commonly linked to OCS development.

[Table 2] details the prevalence and severity of OCS, with 22.8% of patients exhibiting symptoms, consistent with reported prevalence ranging from 10% to 30% in SGA-treated populations Nafisa D et al. (2022).[11] The mean Yale-Brown Obsessive Compulsive Scale (Y-BOCS) score was 14.8, indicating moderate severity, which aligns with other clinical samples Tezenas du Montcel C et al. (2019).[12] The distribution of severity (mild, moderate, severe) showed a predominance of moderate symptoms (51.2%), reflecting the clinical spectrum documented in the literature Spina E et al. (2014).[13]

[Table 3] explores the temporal relationship between SGA initiation and OCS onset. The mean time to onset was 5.4 months, with one-third of cases emerging within three months of treatment initiation, consistent with previous studies reporting early onset of OCS after starting SGAs Kim DD et al. (2020).[14] The significant association of dose increases preceding OCS onset (p=0.004) supports dose-dependent risk hypotheses, echoed in studies by Dold M et al. (2015).[15]

Finally, [Table 4] highlights factors associated with OCS emergence. Although age and sex were not significantly associated, longer illness duration (p=0.003) and risperidone use (p=0.011) were significant predictors. These findings reinforce prior observations suggesting that chronic illness and

specific pharmacologic profiles influence OCS risk Panov G et al. (2023).[16] The non-significant trend towards higher OCS in schizophrenia compared to bipolar disorder aligns with mixed findings in literature, where some studies note similar prevalence in both disorders Grover S et al (2019),[17] while others report higher rates in schizophrenia Zink M.et al. (2014).[18]

CONCLUSION

This study demonstrates that obsessive-compulsive symptoms (OCS) emerge in a significant subset of patients treated with second generation antipsychotics (SGAs), with a prevalence of 22.8%. The emergence of OCS is most commonly associated with schizophrenia diagnosis, longer duration of illness, and use of risperidone. The onset of symptoms typically occurs within the first six months of treatment and is often preceded by dosage increases. These findings highlight the need for clinicians to vigilantly monitor patients on SGAs for the development of OCS, as timely identification and management can substantially improve clinical outcomes and patient quality of life. Future treatment protocols should consider these risks to optimize therapeutic strategies in psychotic disorders.

Limitations of the study

1. Cross-sectional design: The study design limits the ability to establish causality or assess longitudinal changes in obsessive-compulsive symptoms over time.
2. Single-center study: Conducted in one tertiary care hospital, which may limit the generalizability of the findings to broader populations.
3. Potential reporting bias: Reliance on patient self-report and clinical interviews may underestimate or overestimate the presence and severity of OCS.
4. Lack of baseline OCS assessment: Pre-treatment obsessive-compulsive symptoms were excluded by history, but no standardized baseline Y-BOCS assessment was done prior to SGA initiation.
5. Heterogeneity of diagnoses and medications: Inclusion of multiple psychiatric diagnoses and different SGAs could introduce confounding variables influencing OCS emergence.
6. No control group: Absence of a comparator group (e.g., patients on first generation antipsychotics or untreated patients) restricts conclusions about the specific role of SGAs.
7. Limited sample size for subgroup analyses: Smaller numbers within certain subgroups (e.g., clozapine users) reduce statistical power to detect differences.
8. Exclusion of comorbid psychiatric conditions: Patients with comorbidities that could influence OCS were excluded, which may limit applicability to real-world clinical populations.

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