



Original Article

# Correlation of manic and mixed episode severity in bipolar disorder and obsessive symptom severity in comorbidity of these disorders

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## Abstract

**Introduction:** There is much evidence regarding the comorbidity of obsessive-compulsive disorder (OCD) and bipolar disorder (BD). Therefore, this study was done to elucidate the correlation between severity of mixed and manic phases of BD and severity of obsessive-compulsive symptoms in comorbidity of these two disorders.

**Materials and Methods:** In this descriptive study, 30 patients admitted in mixed or manic episodes of bipolar disorder type I in Taleghani and Imam Hossein Hospitals in Tehran in 2011, were evaluated with SCID-I for OCD and if OCD were confirmed, the patients were included in this study. Then Young Mania Rating Scale, Hamilton Rating Scale for Depression, Yale-Brown Obsessive Compulsive Scale and demographic questionnaires were completed for all these patients. The severity of mixed and manic phases and also severity of obsessive-compulsive symptoms in the first week of admission, at the time of discharge and one month after discharge were evaluated. Data were analyzed using descriptive statistics, repeated measure, t-test, Wilcoxon, and Pearson correlation by SPSS.19 software.

**Results:** Significant statistical correlation between severity of obsessive-compulsive symptoms and Hamilton Rating Scale for Depression during admission and at the time of discharge was observed only in mixed phase (respectively  $P=0.005$  and  $P=0.029$ ).

**Conclusion:** Significant correlation between severity of obsessive-compulsive symptoms and depressive component of mixed phase of bipolar disorder can show the stronger correlation between severity of obsessive compulsive disorder and depressive symptoms or depressive episodes of bipolar disorder. This could help us setting appropriate treatment strategies.

**Keywords:** Bipolar disorder, Comorbidity, Obsessive compulsive disorder

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## Introduction

Bipolar disorder is considered to be one of the common disorders. The prevalence of this disorder has been reported to be 7% to 39% based on different protocols (1-6). Obsessive-compulsive disorder (OCD) is one of the anxiety disorders the relation of which with bipolar disorder (BD) has been paid attention to by researchers. The prevalence risk of one or more disorders of axis I in people of major mood disorders is high. In recent years, it has

been reported in epidemiologic and clinical studies that comorbidity of OCD and BD is of great incidence, and this can be concomitant with adverse effects on the trend of BD. In most studies, the OCD in patients with BD has been reported to be 9%-35% which is greater than the general population (7). In a study, it was shown that in outpatients inflicted with OCD, these patients had BD at 15.7% (8).

The relationship between these two disorders has been investigated from different aspects such as severity of OCD after the administration of antidepressants in patients with BD (9), appearance of manic or hypomanic after treatment of OCD with drug (10-13), episodic trend of OCD in BD patients (14,15) and the effect of comorbidity of BD in OCD trend (14).

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The duration of comorbidity of BD and OCD has been considered to be remarkable in epidemiological (16) and clinical (17-19) studies.

In some studies, OCD has been reported to be rare in manic episodes (20) and some reports showed the recovery from OCD in manic attack and recurrence after manic or the onset of depressive episode (9,10,21,22). In different studies done for the comorbidity of these two disorders, there are reported different results: the OCD disorder is related more to depressive episode in BD patients (23). In addition, the comorbidity of OCD disorder in the first episode of acute manic is higher than the general population (8.3%) (24) or similar to that (2%) (25). It seems that the OCD symptoms are reduced in manic and hypomanic episodes and increased in depressive phase (26), concomitant with more anxiety symptoms, low social life quality (27), and social and economic expenditure (28).

Totally, different studies show that comorbidity of OCD with major depression leads to the severity of OCD symptoms and comorbidity of OCD with BD can be accompanied by higher rates of episodic trend (29-31). Regarding the great prevalence of OCD in BD, the great importance of the comorbidity in increasing the severity and duration of BD along with the assessment effects of this comorbidity in disease diagnosis and treatment strategy selection, this study was carried out to investigate the relationship between manic and mixed phase severities with the severity of OCD in the patients hospitalized in two psychiatric centers of Taleghani and Imam Hossein hospitals in Tehran in 2011.

### Materials and Methods

This study was done in analytical-descriptive method with longitudinal observation. The sample population was 30 patients being hospitalized in Emam Hosein and Taleghani hospitals in 1390 who had manic or mixed phase of BD with comorbidity of OCD. The inclusion criteria to the study were the age of 18 or over, comorbidity of BD type I (in manic or mixed phase) and OCD, and the written consent to participate in the study. The exclusion criteria were: Prescription of antidepressants with serotonergic properties during hospitalization and after discharge, Non-medical intervention for OCD, Neurologic diseases and mental retardation. The sampling method is of non-random and available type in that all qualified individuals were participated in the study during 10 months in the order of referral.

Patients were diagnosed to have BD type I (manic phase or mixed) based on DSM-IV<sup>1</sup> according to the

hospital record in Taleghani and Emam Hosein hospitals (diagnosed by a psychiatrist) and experience of OCD were studied with structured interview for DSM-IV (SCID-I<sup>2</sup>) in terms of obsession disorder. They were involved in the study with the confirmation of OCD and the severity of manic or mixed phase and severity of OCD were assessed in the early period after hospitalization (mostly the first week). All the patients were re-assessed during discharge and followed-up a month later. The initial assessments were done by a psychiatrist and the later one (the second and probably third) by a senior psychiatry assistant. Prior to that, the diagnosis conformity of these two assessors was carried out.

The tools used in this study to assess the severity of manic and mixed phases and the severity of OCD symptoms were used the 11-item questionnaire YMRS<sup>3</sup> and the 14-item questionnaire for obsessive severity Y-BOCS<sup>4</sup>, validated in Iran, and 24-item questionnaire HRSD<sup>5</sup>, a structured interview used frequently in national researches (32-36). The demographic and individual information were recorded in check list 8. All the information was analyzed with SPSS.19 as the mean of quantitative data including patients' age, disease duration, and hospitalization duration and frequency of qualitative data such as sex and marital status.

To determine the relationship between the severity of manic and mixed phases of BD and severity of OCD symptoms, statistical analysis of correlation determination and Pearson correlation coefficient were used while the significance level was  $P$ -value<0.05 meanwhile, to determine the score changes of questionnaire, repeated measure, paired-t- test and Wilcoxon tests were used.

This study was confirmed by the ethics committee of Shahid Beheshti medical science university and the informed consent was taken from patients or their family while the patients were explained that their information will be kept confidentially.

### Results

In the present study, 24 patients (80%) were hospitalized in Imam Hossein hospital (23 in female and male wards and 1 in children psychiatric ward) and 6 patients (20%) in Taleghani hospital. 18 patients (60%) were in mixed phase and 12 patients (40%) in manic phase. The mean age of patients was  $35.1 \pm 12.7$  years old (minimum 18 and maximum 64). The mean hospitalization duration was  $30 \pm 12$

<sup>1</sup>Diagnostic and Statistical Manual of Mental Disorders IV  
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<sup>2</sup>Structured Clinical Interview for DSM IV Axis I Disorders

<sup>3</sup>Young Mania Rating Scale

<sup>4</sup>Yale-Brown Obsessive Compulsive Scale

<sup>5</sup>Hamilton Rating Scale of Depression

days (minimum 7 and maximum 62). Five patients were discharged with personal consent for which the hospitalization period was from one week to one month.

The mean duration of infliction with OCD was  $12.7 \pm 10.3$  years and that of BD was  $13.5 \pm 9.1$  years. In 13 patients, BD was prior to OCD and in 7 patients, OCD was prior to BD (4 patients were hospitalized in the first episode of manic).

In 10 patients the duration of infliction with OCD and BD was the same.

The demographic information of the patients is shown in Table 1. The mean score of Y-BOCS, YMRS, and HRSD in the hospitalization time, discharge and one month after discharge separated by manic and mixed phases are summarized in Table 2.

The relationship between severity of OCD symptoms and manic and mixed phases in different times is shown in Table 3 using Pearson correlation coefficient only in mixed phase showing that there was a significant relationship between the severity of OCD symptoms (Y-BOCS) and HRSD score in hospitalization time (Pearson  $r=0.6$ ,  $P=0.005$ ) and discharge time (Pearson  $r=0.5$ ,  $P=0.02$ ).

**Table 1.** Some demographic features of patients in the study

Variables		Frequency (%)
Sex	Men	12 (40)
	Women	18 (60)
Marital status	Married	15 (50)
	Single	13 (43.3)
	Divorced	1 (3.3)
	Widowed	1 (3.3)
Education	Under diploma	13 (44.8)
	diploma	8 (27.6)
	Associate Degree	3 (10.3)
	Master	4 (13.8)
	Graduate	2 (6.7)
Job	Housekeeper	12 (40)
	Unemployed	8 (26.7)
	Employee	2 (6.7)
	Self-employed	4 (13.3)
	Student	3 (10)
	Retired	1 (3.3)
OCD family history	Yes	19 (63.3)
	No	11 (36.7)
BD family history	Yes	20 (66.7)
	No	10 (33.3)
Psychiatric disorder comorbidity	Yes	7 (23.3)
	No	23 (76.7)
Substance abuse history	Yes	6 (20)
	No	24 (80)

**Table 2.** Mean of scale scores in different times of assessment in manic and mixed phases in patients with comorbidity of bipolar disorder and obsessive compulsive disorder

Scores	Manic phase					
	Hospitalization time		Discharge time		One month after discharge	
	Mean±SD	Min-Max	Mean±SD	Min-Max	Mean±SD	Min-Max
Y-BOCS	15 ± 7.6	2-25	11 ± 8.7	0-28	5 ± 7	0-10
YMRS	19.6 ± 3.8	14-25	5.8 ± 5.7	0-19	6.5 ± 0.7	6-7
HRSD	6.9 ± 2.9	1-12	2.9 ± 2.5	0-8	5.5 ± 6.3	1-10
Scores	Mixed phase					
	Mean±SD	Min-Max	Mean±SD	Min-Max	Mean±SD	Min-Max
	Y-BOCS	23.6 ± 11.4	4-39	16.8 ± 12.7	0-47	16.6 ± 12.6
YMRS	19.2 ± 10	5-35	5.4 ± 4.8	0-20	9.7 ± 12.6	1-30
HRSD	20.7 ± 5.6	12-31	9.9 ± 10	0-37	10.1 ± 4.8	3-16

Y-BOCS: Yale-Brown Obsessive Compulsive Scale

YMRS: Young Mania Rating Scale

HRSD: Hamilton Rating Scale of Depression

**Table 3.** Correlation of OCD symptom severity with severity of manic and mixed phases in different times of assessment in patients with coexisting bipolar disorder and obsessive compulsive disorder

	Mixed phase		Manic phase	
	r*	P	r*	P
Correlation of OCD symptoms severity (Y-BOCS) with HRSD score at hospitalization time	0.629	0.005	-0.522	0.082
Correlation of OCD symptoms severity (Y-BOCS) with HRSD score at discharge time	0.515	0.029	-0.184	0.567
Correlation of OCD symptoms severity (Y-BOCS) with HRSD score at one month after discharge	0.380	0.354	-1/000	-
Correlation of OCD symptoms severity (Y-BOCS) with YMRS score in hospitalization time	0.051	0.840	-0.194	0.547
Correlation of OCD symptoms severity (Y-BOCS) with YMRS score at discharge time	0.239	0.339	-0.007	0.982
Correlation of OCD symptoms severity (Y-BOCS) with YMRS score at one month after discharge	0.070	0.869	1.000	-

The results of relationship between score change of OCD (Y-BOCS) and that of mixed and manic phase (YMRS, HRSD) from hospitalization to discharge time are shown in Table 4.

**Discussion**

In the study performed, there was a significant relationship between severity of OCD symptoms

(Y-BOCS) and HRSD score in hospitalization and discharge time only in mixed phase, in consistent with those of zutshi et al in 2007, comparing the clinical features of OCD with and without comorbidity of BD in 28 patients with comorbidity of OCD and BD and 78 patients with OCD but no BD, who concluded OCD is exacerbated in

depressive phase and its severity decreases in manic and hypomanic phases (26). Sala et al showed the inappropriate effects of anxiety disorders in Youth BD and their more relationship with mixed syndromes and subsyndromal depression (37).

**Table 4.** The relationship between score changes of OCD symptoms (Y-BOCS) and symptoms in manic and mixed phases (HRSD and YMRS) from hospitalization to discharge time in patients with comorbidity of bipolar disorder and obsessive compulsive disorder

	r*	P
relationship between score changes of Y-BOCS and HRSD from hospitalization to discharge time	0.361	0.05
relationship between score changes of Y-BOCS and YMRS from hospitalization to discharge time	0.339	0.067

Shabani et al (2007) showed different relationships between OCD and BD such as direct relationship between severity of OCD and mania and emersion of OCD symptoms in manic phase only (38).

Wan Kim et al (2014) displayed the comorbidity of anxiety disorders such as OCD has a negative effect on clinical trend of BD (39).

The results of the present study can show greater relationship of obsession with depression component of BD in mixed phase and lack of this relationship in manic phase can be due to low Hamilton scores (HRSD) in this phase.

In this study, YMRS scores had no significant relationship with severity of OCD symptoms. The lower relationship between obsession and manic confirmed the study results of Shabani et al in 2006 which was done longitudinally on patients assessing the changes from manic and mixed phases to recovery phase (40).

In the assessments of one month after discharge, there was seen no significant relationship between OCD symptoms and YMRS and HRSD scores in any phase while it cannot be judged due to low number of referrals (33.3%).

In this study, the change in Y-BOCS, YMRS, and HRSD scores was significant from hospitalization to discharge time showing the effect of treatment during the hospitalization, but in the examination of score changes in mixed and manic phases of BD, the change in Y-BOCS score was not significant in manic phase which can be due to lack of depression component in this episode.

Despite insignificant change of Y-BOCS score in manic phase, p-value of this change was near significance at 0.05 level.

The dropping score of Y-BOCS in this episode can be attributed to the anxiety component which is not

examined in this study. In addition, about the mixed phase, it seems that OCD symptoms in this phase is dependent on arousal and decreases when the severity of symptoms in this phase is reduced and arousal lowers, due to variety of administered treatments in manic and mixed phases or greater relationship of anxiety and OCD with mixed phase because of depression component.

On the other hand, there was a significant relationship between score changes of OCD symptoms severity and score changes of HRSD from hospitalization to discharge time in all patients showing the greater relationship between OCD signs and depression component of BD.

Some of the limitations of this study are the small sample size, few patients returning for post discharge assessment, treatment type heterogeneity and other factors such as comorbidities and family history. However this study was done only in manic and mixed phase of BD type I, and depressive phase and BD type II (which have more concomitance with OCD) were not assessed. In addition, anxiety component that can be the reason behind the relationship between BD and OCD was not assessed.

Finally, using greater sample size, doing study in all phases of BD type I and II, evaluating anxiety component with a scale such as Hamilton, matching for treatment type and comorbidities and a more rigorous follow up is recommended for future studies.

### Conclusion

There was a significant correlation between severity of OCD symptoms (Y-BOCS score) and depressive component (HRSD score) in mixed phase of BD that can show further relation of obsessive severity with depressive episode or symptoms of BD. This result perhaps can propose more suitable treatment strategies.

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Results of this study are obtained from information of real patients and the authors also declare that there is no conflict of interest regarding the publication of this paper.

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