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Original Article

Clinical characteristics of mixed bipolar disorders versus bipolar depression

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Abstract: Objective: To compare the differences in clinical characteristics between mixed bipolar disorders and bipolar depression, and to provide support evidence for clinical diagnosis and treatment. Methods: In this retrospective study, the clinical data of 100 patients with bipolar disorders admitted to the Psychiatric Department in our hospital between January 2013 and December 2016 were analyzed. Among the enrolled patients, 60 had mixed states of bipolar disorders (the mixed states group), and 40 had bipolar depression (the depression group). The differences in the clinical characteristics of personality traits, mental symptoms and somatic symptoms, as well as total scores of the Beck Depression Inventory (BDI) scale and the Symptom Checklist 90R (SCL-90R) scale were compared between the two groups. Results: For personality traits, the incidences of anxiety, stubbornness, irritability, impulsiveness were significantly higher in the mixed states group than in the depression group ($P<0.05$). Regarding mental symptoms, significantly more positive episodes of mood lability, reverie at bedtime, agitation, anger, irritability, racing thoughts, obsession and recklessness were observed in the mixed states group than in the depression group ($P<0.05$); whereas the incidences of self-accusation, low self-esteem, depression, sadness and fatigability were significantly higher in the depression group than in the mixed states group ($P<0.05$). With regard to somatic symptoms, among them, significantly more positive episodes of headache, decreased need for sleep, palpitation and muscle twitching were found in the mixed states group than in the depression group ($P<0.05$), whereas the incidences of dreaminess and hypersomnia were significantly higher in the depression group than in the mixed states group ($P<0.05$). The BDI and SCL-90 scores indicated no significant differences between the two groups. Conclusion: Compared with the patients with bipolar depressive symptoms, patients with mixed states have distinctive clinical characteristics, which can be used as references, giving support evidence for clinical diagnosis and treatment.

Keywords: Mixed states of bipolar disorder, bipolar depression, clinical characteristic

Introduction

Bipolar disorder, a common chronic mental disorder, shows high morbidity, misdiagnosis, recurrence and disability among the patients [1-3]. Clinically, mixed states of bipolar disorder and bipolar depression are both prevalent bipolar disorders. Mixed states of bipolar disorder defined as pathological coexistence of depression and manic symptoms, present more complicated and variable clinical manifestations than other subtypes of bipolar disorders [4, 5]. In recent years, no unified definitions or diagnostic criteria for episodes of mixed states have been established. This has been capturing increasing attention from psychiatric clinicians. Due to complex and multiple clinical manifestations, episodes of mixed states show an array of forms of presentation. They are often combined with other symptoms of bipolar disorders based on bipolar depressive symptoms. Consequently, it becomes a refractory disease in psychiatric clinics [6, 7]. Furthermore, its prominent disadvantages of high clinical misdiagnosis, low recognition and poor specificity pose diagnostic and treatment challenges to clinicians. The purpose of the present study was to investigate the patients with mixed episodes of bipolar disorder and those with episodes of polar depression, and to compare the differences in clinical characteristics between mixed states of bipolar disorder and bipolar

Table 1. Comparison of general data of patients across groups

Variable	Depression (n=40)	Mixed states (n=60)
Age (year)	37.1±12.7	36.7±12.5
Gender (n)		
Male	21 (52.50%)	32 (53.33%)
Female	19 (47.50%)	28 (46.67%)
Disease duration (year)	5.35±1.41	5.74±1.51
Education (n)		
Junior middle school or lower	7 (17.5%)	12 (20%)
High school	12 (30%)	17 (28.33%)
Junior college	18 (45%)	26 (43.33%)
University or higher	3 (7.5%)	5 (8.33%)
Marriage (n)		
Single	9 (22.5%)	12 (20%)
Married	29 (72.5%)	45 (75%)
Devoiced	2 (5%)	3 (5%)

depression, hoping the results of the study can bring significant insight into clinical diagnosis and treatment.

Materials and methods

General data

In this retrospective study, the clinical data of 100 patients with bipolar disorders treated in the Psychiatric Department in our hospital between January 2013 and December 2016 were analyzed. Among them, 60 had mixed bipolar disorders (the mixed states group), male 32 and female 28, with mean age of 36.7±12.5 years and mean disease course of 5.74±1.51 years. The patients' education backgrounds were as follows: 12 graduated from junior middle school or lower, 17 from high school, 26 from junior college, and 5 from college or university or higher. The patients' marital status: 12 patients were single; 45 married, and 3 divorced. Forty had polar depression (the depression group), male 21 and female 19, with mean age of 37.1±12.7 years and mean disease course of 5.35±1.41 years. The patients' education backgrounds: 7 graduated from junior school or lower, 12 from high school, 18 from junior college and 3 college or university or higher. The patients' marital status: 9 patients were single; 29 married, and 2 divorced. Patients were included in the study if they met the *Criteria for China Classification and Diagnosis of Mental Disorders* and cooperated in completing the collection of clinical data and assessment of the rating scales; they or their family members provided written informed consents. Any patient who had severe somatic diseases, language or hearing disorders, or mental dysplasia was excluded.

Study methods

The self-made questionnaires were used to record the following three clinical characteristics of all the eligible patients: personality traits, mental symptoms and somatic symptoms. Among them, the evaluation categories in the personality traits questionnaire included optimism, self-will, irritability, impatience, stubbornness, impulsiveness, suspicion, sensitivity, pessimism, gentleness, aggression and shyness; the evaluation categories in the mental symptoms questionnaire included mood lability, reverie at bedtime, agitation, irritability, anger, racing thoughts, coercion, self-accusation, low self-esteem, depression, sadness, anxiety, helplessness, fatiguability, invigoration and recklessness; the major evaluation categories in the somatic symptoms questionnaire were headache, decreased need for sleep, hypersomnia, palpitation, hyperhidrosis, light sleep, hand tremor, muscle twitching, polyuria, hyperarousal, early awakening, systemic pain, weight gain or loss, as well as increased or reduced appetite.

All patients were assessed using the questionnaires involved in the Symptom Checklist 90R (SCL-90R) and the Beck Depression Inventory (BDI) scales. The SCL-90R scale covers 90 categories of 1-5 grades in severity [8]; and the BDI scale covers 21 categories (each having 0-3 scores of four grades), with higher scores indicating more severe depression [9].

Statistical analysis

Data analyses were performed using SPSS software, version 12.0. The t test was used to compare the differences in measurement data with normal distribution between the two groups whereas the non-parametric test was used to compare the differences in those without normal distribution. The chi-square test was applied to compare the count data between

Table 2. Comparison of personality traits between the mixed states group and the depression group (n, %)

Personality traits	Mixed states (n=60)	Depression (n=40)	χ^2	*P* value
Impatience	33 (55)*	10 (25)	7.519	<0.05
Stubbornness	25 (41.67)*	9 (22.5)	4.219	<0.05
Irritability	24 (40)*	8 (20)	4.648	<0.05
Impulse	16 (26.67)*	5 (12.5)	5.102	<0.05

Note: comparison with the depression group, *P<0.05.

Table 3. Comparison of mental symptoms between the mixed states group and the depression group

Mental symptom	Mixed states (n=60)	Depression (n=40)	χ^2	P
Mood lability	54 (90)*	5 (12.5)	64.574	<0.05
Reverie at bedtime	53 (88.34)*	24 (60)	12.652	<0.05
Agitation	50 (83.33)*	15 (37.5)	20.274	<0.05
Anger	44 (73.33)*	11 (27.5)	21.352	<0.05
Irritability	47 (78.33)*	16 (40)	9.673	<0.05
Racing thoughts	38 (63.33)*	4 (10)	27.795	<0.05
Obsession	26 (43.33)*	8 (20)	6.471	<0.05
Recklessness	25 (41.67)*	1 (2.5)	7.833	<0.05
self-accusation	34 (56.67)*	32 (80)	5.695	<0.05
Low self-esteem	33 (55)*	31 (77.5)	4.786	<0.05
Depression	35 (58.33)*	38 (95)	15.575	<0.05
Sadness	39 (65)*	38 (95)	12.531	<0.05
Fatigability	45 (75)*	37 (92.5)	10.358	<0.05

Note: comparison with the depression group, *P<0.05.

Table 4. Comparison of somatic symptoms between the mixed states group and the depression group

Somatic symptoms	Mixed states group (n=60)	Depression group (n=40)	χ^2	P
Headache	29 (48.33)*	10 (25)	5.478	<0.05
Decreased need for sleep	22 (36.67)*	0 (0)	17.274	<0.05
Palpitation	16 (26.67)*	2 (5)	8.402	<0.05
Muscle twitching	20 (33.33)*	5 (12.5)	5.882	<0.05
Dreaminess	19 (31.67)*	22 (55)	4.562	<0.05
Hypersomnia	25 (41.67)*	28 (70)	5.541	<0.05

Note: comparison with the depression group, *P<0.05.

the two groups. P<0.05 was considered statistically significant.

Results

Comparison of general data of patients across groups

There were no significant differences in age, gender, disease course, educational backgrounds and marriage between the mixed states group and the depression group (P>0.05, **Table 1**).

Comparison of personality traits between the mixed states group and the depression group

Compared with the depression group, the patients in the mixed states group had significantly more positive episodes of impatience, stubbornness, irritability and impulse as validated by the chi square test (P<0.05, **Table 2**).

Comparison of mental symptoms between the mixed states group and the depression group

For mental symptoms, remarkably more positive episodes of mood lability, reverie at bedtime, agitation, anger, irritability, racing thoughts, obsession and recklessness were observed in the mixed states group than in the depression group according to the χ^2 test (P<0.05); whereas remarkably more positive episodes of self-accusation, low self-esteem, depression, sadness and fatigability were found in the depression group than in the mixed states group (P<0.05, **Table 3**).

Comparison of somatic symptoms between the mixed states group and the depression group

With regard to somatic symptoms, significantly more positive episodes of headache, decreased need for sleep, palpitation and muscle twitching were observed in the mixed states group than in the depression group as demonstrated by the χ^2 test (P<0.05); whereas significantly more positive episodes of dreaminess and hypersomnia were found in the depression group than in the mixed states group as demonstrated by the χ^2 test (P<0.05, **Table 4**).

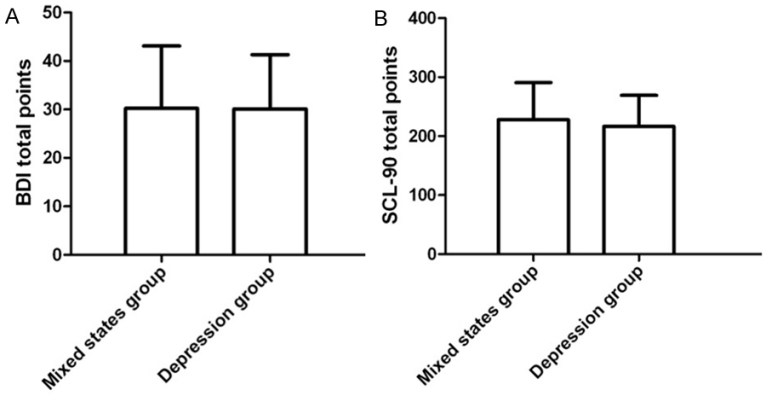

Figure 1. Comparison of BDI and SCL-90 total scores between the two groups. A: BDI total scores; B: SCL-90 total scores.

Comparison of BDI and SCL-90 scores between the two groups

The BDI and SCL-90 total scores were (30.24±12.87) and (227.78±62.93) respectively in the mixed states group, and (30.11±11.21) and (216.65±52.63) respectively in the mixed states group and depression group. The total scores for BDI and the SCL-90 did not differ significantly between the two groups (P>0.05, **Figure 1**).

Discussion

Mixed states of bipolar disorder refer to the chronic psychosis indicative of coexistence or alternation of depressive and manic symptoms in the same episode, which lasts for more than 2 weeks and is predominantly present as manic and depressive. Bipolar depression is predominantly depressive, concurrent with manic symptoms. But, the major feature distinguishing from mixed states of bipolar disorder is there is no mixture of manic and depressive symptoms in the same episode of bipolar depression. The presence of manic and depressive symptoms in both mixed states and bipolar depression gives rise to high clinical misdiagnosis, which poses challenges to clinical diagnosis and treatment. Studies have demonstrated that [10-12], the onset of mixed states of bipolar disorder is correlated with personal straits of the patients. The patients with personality trait of depression are indicative of mixed mania in an episode of mania whereas those with cheerful trait are susceptible to mixed depression, which potentially leads to misdiagnosis or missed diagnosis of bipolar depression. In the present study, the comparison of personality traits between the mixed states group and the depression group implies that significantly more positive episodes of impatience, stubbornness, irritability and impulsiveness were observed in the mixed states group than the depression group, suggesting that the patients with chronic psychosis are more susceptible to mixed states of bipolar disorder if they have the above four personality traits. Given this, in the process of clinical diagnosis and treatment, we should identity the patients with potential susceptibility of mixed states by taking the patients' personality traits into consideration. It is of help to improve differential diagnosis of mixed states and bipolar depression, and reduce misdiagnosis and missed diagnosis for mixed states.

Compared with bipolar depression, mixed states as the most common bipolar disorder, demonstrates more complicated indications and clinical manifestations, especially concomitant with multiple manic and depressive symptoms. This often gives rise to changes and fluctuations in mood of the patient, from pleasure or irritability to sorrow or depression [13-15]. The present study was conducted to compare the differences in mental symptoms between the mixed states group and the depression group. The results demonstrated that significantly more positive episodes of mood lability, reverie at bedtime, agitation, anger, irritability, racing thoughts, and obsession and recklessness were observed in the mixed states group than in the depression group (P<0.05); the above symptoms presented in more than half of the patients in the mixed states group, suggesting that the above mentioned mental symptoms can be deemed as the markers for screening characteristics of mixed states and of bipolar disorder. In addition, significantly more positive episodes of self-accusation, low self-esteem, depression, sadness and fatiguability occurred in the depression group compared to the mixed states group (P<0.05).

However, the incidence of such symptoms was not low in mixed states of bipolar disorder, suggesting that depressive symptoms are not uncommon in the mixed states of bipolar disorder.

Clinically, the patients with mixed states and bipolar depression are associated with somatic symptoms with various severity, and low positivity, potentially delaying the correct treatment. Some literature has noted [16, 17] that the somatic symptoms of patients with mixed states are mainly characteristic of headache, decreased need for sleep, and palpitation, which are closely correlated with manic manifestations. Other studies have reported that the somatic symptoms of patients with bipolar depression are mainly characteristic of light sleep, dreaminess and hypersomnia, which are different from those of the patients with mixed states [18-20]. The comparison of somatic symptoms between the two study groups in our study demonstrated that significantly more positive episodes of headache, decreased need for sleep, palpitation and muscle twitching were observed in the mixed states group than in the depression group as validated by the χ^2 test ($P<0.05$); whereas significantly more positive episodes dreaminess and hypersomnia were found in the depression group than in the mixed states group as demonstrated by the χ^2 test, suggesting that episodes of headache, decreased need for sleep, palpitation and muscle twitching are more common in mixed states of bipolar disorder, but the proportions of episodes of dreaminess and hypersomnia are not lower. It further suggests that if different levels of somatic symptoms are present in the affective setting, we should consider the patient may suffer mixed bipolar disorder, which plays a crucial role in differential diagnosis of bipolar depression. In the present study, the differences in overall scores of SCL-90 scale and of the BDI scale between the two groups were not statistically significant, and most of clinical manifestations of mental symptoms were similar in the two groups, reflecting clinical difficulties in discriminating mixed bipolar disorder from bipolar depression.

In conclusion, there were significant differences in multiple categories between bipolar depression and mixed bipolar disorder. Compared with those with bipolar depression, the patients with mixed states have some special clinical characteristics, which can be used as markers for differentiating the disease. This contributes to improvements in identification of mixed states and reductions in its misdiagnosis and missed diagnosis.

Disclosure of conflict of interest

None.

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