Brief Report

Relationship Between Temperament and Character Traits, Mood, and Medications in Bipolar I Disorder

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ABSTRACT

Introduction: Bipolar I disorder is an illness causing mood shifts that can result in personality and character trait alterations. The relationship between mood and personality and character traits in bipolar I disorder is unclear at this time.

Methods: We conducted a study from February 2009 to March 2010 that included 42 subjects with bipolar I disorder, which was confirmed using the Structured Clinical Interview for *DSM-IV* Axis I Disorders. Mood was assessed via the Young Mania Rating Scale (YMRS) and the 30-item Clinician-rated Inventory of Depressive Symptomatology (IDS-C). Temperament and character traits were assessed via the Temperament and Character Inventory (TCI). Multivariate analysis was used to test relationships between mood and temperament and character traits with the effects of possible cofactors taken into account (eg, age, gender, medications).

Results: We noted a positive correlation between YMRS scores and persistence ($P = .046$) and a trend toward positive correlation with novelty seeking ($P = .054$). There was a positive correlation between higher IDS-C scores and harm avoidance ($P < .001$) and a negative correlation with self-directedness scores ($P < .001$). Antipsychotic use was positively correlated with the character trait self-directedness ($P = .008$), with a trend toward a positive correlation with reward dependence ($P = .056$). Lithium was negatively correlated with reward dependence ($P = .047$) and self-transcendence ($P = .028$), with a trend toward a negative correlation with novelty seeking ($P = .053$).

Conclusions: The findings of our study suggest that some personality and character traits may vary according to mood state and medications in patients with bipolar I disorder. Prospective and longitudinal studies are required to fully characterize the relationships between personality and character traits and mood state in bipolar I disorder.

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Literature suggests a relationship between character and personality traits and bipolar disorders.[1–3] The expression of personality traits may be associated with affective states.[3] We therefore designed a study to assess the relationship between temperament and character traits and mood state in subjects diagnosed with bipolar I disorder.

METHODS

The study included 42 subjects with bipolar I disorder. *DSM-IV-TR* Axis I diagnosis of bipolar I disorder was confirmed using the Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I/P).[4] The Young Mania Rating Scale (YMRS)[5] and the 30-item Clinician-rated Inventory of Depressive Symptomatology (IDS-C)[6] were used to determine mood state. The Temperament and Character Inventory (TCI)[7] was used to determine temperament and character traits. Current medication use was documented. Continuous data were summarized using mean and standard deviation, while categorical data were summarized using frequencies and percentages. A backward stepwise model selection was conducted to determine the relationships between mood state and medication status and personality traits. Variables were included in the model if they retained a 15% level of significance and would stay in the model if their significance was found to be ≤ 5%. Statistical analysis was conducted using SAS V.9.3. Data were collected from February 2009 to March 2010. The study was conducted at the University of Texas Southwestern Medical Center, Dallas. Informed consent and institutional review board approval were obtained for all participants.

RESULTS

Subject Demographics and Clinical Characteristics

In our sample, 15 (35.71%) subjects were male and 27 (64.29%) were female. In regard to race, 15 (35.71%) subjects were black, 24 (57.14) were white, and 3 (7.14%) were Hispanic. The mean ± SD age in our sample was 41.02 ± 11.20 years old. The mean ± SD YMRS score was 14.02 ± 7.8 and IDS-C score was 20.90 ± 12.31. The TCI novelty-seeking score was 21.00 ± 6.96, harm avoidance was 17.48 ± 8.43, reward dependence was 14.76 ± 3.63, persistence was 5.38 ± 2.18, self-directedness was 28.1 ± 8.16, cooperativeness was 33.75 ± 5.82, and self-transcendence was 18.71 ± 6.49. Of the subjects, 79% were taking psychiatric medications, including antipsychotics (n = 17, 40.48%), antidepressants (n = 17, 40.48%), anticonvulsants (n = 21, 50.00%), benzodiazepines (n = 12, 28.57%), and lithium (n = 8, 19.05%).

Sample Relationships With Temperament and Character Traits

Table 1 summarizes the adjusted linear regression modeling results. We found a trend toward a positive correlation between novelty

Table 1. Results for Adjusted Linear Regression Analysis[a]

TCI Domain	Association	Estimate (95% CI)	P Value
Novelty seeking	YMRS	0.26 (−0.004 to 0.53)	.054
	Lithium	−5.21 (−10.5 to 0.07)	.053
Harm avoidance	IDS-C	0.45 (0.29 to 0.61)	<.001
Reward dependence	Antipsychotics	2.11 (−0.03 to 4.26)	.056
	Lithium	−2.71 (−5.4 to −0.02)	.047
Persistence	YMRS	0.086 (0.001 to 0.017)	.046
Self-directedness	IDS-C	−0.43 (−0.58 to −0.28)	<.001
	Antipsychotics	5.12 (1.39 to 8.85)	.008
Self-transcendence	Lithium	−5.51 (10.43 to −0.6)	.028

[a]Summarizes the significant findings as well as those that demonstrated a trend toward significance from adjusted linear regression analyses (backward stepwise regression) between mood state, medications, and personality and character traits in subjects with bipolar I disorder. P values were considered significant at 5%.
Abbreviations: IDS-C = 30-item Clinician-rated Inventory of Depressive Symptomatology, TCI = Temperament and Character Inventory, YMRS = Young Mania Rating Scale.

seeking and YMRS score ($P = .054$) and a trend toward a negative correlation with lithium use ($P = .053$). Harm avoidance was positively correlated with the IDS-C score ($P < .001$). Reward dependence was positively correlated with antipsychotic use ($P = .056$) and negatively correlated with lithium use ($P = .047$). Persistence was positively correlated with the YMRS score ($P = .046$). Self-directedness was negatively correlated with the IDS-C score ($P < .001$) and positively correlated with antipsychotic use ($P = .008$). Self-transcendence was negatively correlated with lithium use ($P = .028$). No correlations were noted with cooperativeness.

DISCUSSION

Our study is consistent with literature, which suggests that mood state may significantly impact personality traits.[8–10] The findings also suggest the possible relationship between medications and personality and character traits.

The relationships between personality and character traits may have important implications for the course of illness and pathophysiology of bipolar disorder. Character and personality traits have been associated with suicidality,[11,12] addictive behaviors,[13] substance abuse,[14] anxiety,[15] and depressive symptomatology.[3] There also may be a significant heritable component of personality and character traits in bipolar disorder.[16–18] In addition, temperament and character traits have also been associated with monoamines implicated in mood disorders.[19]

Our study is primarily limited by the cross-sectional design. Future prospective and longitudinal studies are required to fully characterize the relationships between personality and character traits, mood state, and medications in bipolar I disorder.

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