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The effect of severity and personality on the psychotic presentation of major depression

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ABSTRACT

The aim of the present study was to evaluate whether symptom severity or personality traits are associated with psychotic symptoms in major depression (MD), since it is still debated whether psychotic depression represents the most severe form of depression or the effect of personality structure. The study included 163 patients affected by MD who were divided into four groups on the basis of the presence/absence of melancholic features and psychotic symptoms. All subjects completed the Structured Clinical Interview for DSM-IV Disorders (SCID-IV), the Structured Clinical Interview for DSM-IV Personality Disorders (SIDP-IV) and the Hamilton Rating Scale for Depression (Ham-D). Personality was assessed after MD remission (absence of DSM-IV criteria and Ham-D score lower than 7 for at least 2 months). Psychotic symptoms were positively associated with symptom severity (higher Ham-D total score) and with paranoid and schizotypal traits and negatively related to histrionic traits. Our data support the view that the effect of paranoid-schizotypal traits and symptom severity on the presence of psychotic symptoms in MD occurs separately and they are independent of each other.

1. Introduction

The term “psychotic depression” implies different meanings in the psychiatric literature: a threshold of severity leading to reality distortion; a melancholic presentation of depression; a characteristic of “endogeneity” of the affective disorder, independently from the appearance of psychotic symptoms (Parker et al., 1995). Moreover, “psychotic depression” has also been used in opposition to “neurotic depression”, which defines a mild form of depression linked to inner conflicts or, anyway, to a psychological pathogenesis (Parker, 2003).

Some authors (Frances et al., 1981; Frangos et al., 1983; Lykouras et al., 1986) have suggested that psychotic depression might represent, upon a severity continuum, a more severe degree of depression. This view is also considered in the recent editions of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III, DSM-III-R, DSM-IV and DSM-IV-TR) (American Psychiatric Association, 1980, 1987, 1994, 2000), where the presence of psychotic symptoms is conceptualized as an expression of a severe form of major depression (MD) and reported as a specifier of severity (MD “severe with psychotic features”).

Nevertheless, in clinical practice even mild or moderate forms of MD can be characterized by the presence of psychotic features (Keller et al., 2007). These clinical pictures indicate that the relationship between severity and psychosis is not so strong since depression severity alone does not entirely account for the presence of psychotic symptoms (Keller et al., 2007; Maj, 2008), and they thus suggest a separation between “psychosis” and “severity” specifiers (Ohayon and Schatzberg, 2002; Maj et al., 2007).

The involvement of personality characteristics has also been proposed to explain the development of psychotic symptoms during a depressive episode (Schatzberg et al., 1985). According to this hypothesis, peculiar personality traits may “activate” psychotic symptoms when a depressive episode occurs, regardless of the depression severity.

However, the study of personality profile in psychotic depressed patients is mostly neglected (Parker, 2003), and only a few studies are currently available today. These studies observed that paranoid traits (Lykouras et al., 1986) or cluster A personality disorders (PDs) (Bellini et al., 1992; Serretti et al., 1999) were more frequent in psychotic than in non-psychotic depressed patients, while obsessive–compulsive traits did not differentiate psychotic and non-psychotic depressed patients (Frances et al., 1981; Lykouras et al., 1986). Moreover, cluster A PDs seem to predict the development of mood-incongruent psychotic features in depressed subjects (Bellini et al., 1992).

The controversy about which model might better explain the psychotic presentation of depression is also not yet resolved because of the methodological limitations of previous studies: in many studies the term “psychotic depression” implies either unipolar or bipolar forms of depression (Parker et al., 1995, 1996; Lattuada et al., 1999; Ohayon and Schatzberg, 2002; Keller et al., 2006). Although there is

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some evidence that bipolar and unipolar depressions are similar (Benazzi, 1999), mixing bipolar and unipolar depressed patients may affect the homogeneity of the study population, compromising the reliability of the results.

Moreover, most studies have used, as a diagnostic comparison group, patients affected by MD rather than non-psychotic melancholia, even though the prevailing representative views of delusional depression suggest that any clarification of its status might best involve a comparison group of melancholic depressed patients, since, as Parker et al. (1995) suggested, psychotic depression can be conceptualized as a separate type of melancholia, because of some overlap in their clinical features.

Finally, studies investigating either severity or personality in psychotic depression did not control for the effect of the other variable.

In the present study, we evaluated whether specific personality features may be associated with the presence of psychotic features in patients affected by unipolar major depressive disorder, controlling for the effect of depressive symptom severity.

2. Methods

2.1. Subjects

Subjects included in the study were selected from patients who consecutively sought treatment at the Psychiatric Unit of the University Hospital of Parma since January 2001, because they were affected by unipolar major depression.

Patients were included in the study if they meet the following criteria: 1) their age ranged between 18 and 75 years; 2) they achieved a remission of the MD episode (see remission criteria); and 3) their written informed consent was obtained.

Patients were excluded from the study if they were affected by the following: 1) current mental disorders related to a general medical condition; and 2) cognitive impairment (Mini-Mental State Examination score lower than 25) which interfered with the ability to reliably complete diagnostic interviews or questionnaires.

2.2. Procedures

All subjects completed the Structured Clinical Interview for DSM-IV Disorders (SCID-IV) (Mazzi et al., 2000), the Structured Interview for DSM-IV Personality Disorders (SIDP-IV) (Pfhol et al., 1995), and the 17-items Hamilton Rating Scale for Depression (Ham-D) (Hamilton, 1960).

The SCID-IV and Ham-D were administered at the first visit and then monthly, whereas the SIDP-IV was administered only when complete remission was achieved (see below).

According to the criteria of DSM-IV, four groups of MD patients were considered: 1) "unspecified" MD, without psychotic and melancholic features (UMD); 2) MD with only psychotic features (PMD); 3) MD with only melancholic features (MMD); 4) MD with both psychotic and melancholic features (PMMD).

Three scores of the Ham-D were considered: the total score as a measure of global severity of depression and the "retardation" and the "agitation" item scores, since the psychomotor disturbances are supposed to be the core features of "endogeneity" (Parker, 2000).

Personality traits rather than categories were considered because the number of personality categories found in each subgroup of patients was too small to allow reliable evaluations. Moreover, the dimensional approach is thought to be superior to the categorical model, especially for research purposes (Widiger, 1992); therefore the dimensional model offers some advantages for the study of the relationship between depression and personality.

2.2.1. Treatment

All patients were treated with antidepressants, whereas an antipsychotic agent was added only in patients with psychotic symptoms.

2.2.2. Remission criteria

Patients were defined in complete remission if, for at least 2 months, their symptoms did not satisfy the DSM-IV diagnostic criteria for MD, including psychotic features, and if their Ham-D score was lower than 7.

2.3. Statistical analysis

One-way analysis of variance, with Bonferroni post-hoc correction, was used to compare age, age at onset, Ham-D scores and personality traits of the four groups of MD patients.

Table 1
The severity of symptoms and the personality traits in patients with major depression.

	Unspecified major depression (UMD)	Major depression with melancholic features (MMD)	Major depression with psychotic features (PMD)	Major depression with psychotic and melancholic features (PMMD)	One-way ANOVA with Bonferroni post-hoc analysis, d.f. = 3, 159	
	$n = 67$	$n = 34$	$n = 21$	$n = 41$	F	p
Gender (female)	$n = 52$, 77.6%	$n = 24$, 70.6%	$n = 15$, 71.4%	$n = 28$, 68.3%	–[*]	–[*]
Age	46.1 ± 13.7	47.9 ± 15.4	50.1 ± 15.3	45.7 ± 13.6	0.5	0.64
Age at onset	37.7 ± 13.4	31.7 ± 9.9	38.2 ± 15.1	33.2 ± 11.5	2.5	0.06
Ham-D total score	19.1 ± 1.2	31.3 ± 4.5	28.2 ± 8.2	42.5 ± 5.4	225.0	<0.001[a]
Ham-D retardation score	0.4 ± 0.5	1.6 ± 0.8	1.1 ± 1.4	3.1 ± 0.7	96.3	<0.001[a]
Ham-D agitation score	1.3 ± 0.5	2.1 ± 0.7	2.4 ± 1.0	3.3 ± 1.0	46.3	<0.001[a]
Personality features						
Paranoid traits	0.59 ± 0.44	0.46 ± 0.44	1.06 ± 0.53	0.89 ± 0.60	9.3	<0.001[b]
Schizoid traits	0.23 ± 0.30	0.17 ± 0.23	0.41 ± 0.45	0.30 ± 0.46	2.2	0.08
Schizotypal	0.21 ± 0.23	0.17 ± 0.24	0.58 ± 0.39	0.26 ± 0.36	9.8	<0.001[c]
Cluster A traits	1.03 ± 0.74	0.81 ± 0.80	2.05 ± 0.92	1.46 ± 1.14	10.5	<0.001[b]
Antisocial traits	0.25 ± 0.14	0.01 ± 0.32	0.02 ± 0.10	0.01 ± 0.02	0.5	0.66
Borderline traits	0.46 ± 0.56	0.38 ± 0.54	0.24 ± 0.33	0.38 ± 0.51	0.9	0.39
Histrionic traits	0.57 ± 0.54	0.37 ± 0.38	0.25 ± 0.33	0.26 ± 0.37	5.1	0.002[d]
Narcissistic traits	0.49 ± 0.49	0.69 ± 1.86	0.19 ± 0.23	0.38 ± 0.40	1.4	0.24
Cluster B traits	1.54 ± 1.28	1.45 ± 1.99	0.70 ± 0.69	1.02 ± 0.99	2.8	0.04[d]
Avoidant traits	0.52 ± 0.43	0.57 ± 0.48	0.76 ± 0.64	0.65 ± 0.66	1.2	0.28
Dependent traits	0.69 ± 0.55	0.62 ± 0.55	0.55 ± 0.48	0.60 ± 0.40	0.6	0.59
Obsessive–compulsive traits	0.74 ± 0.55	0.77 ± 0.50	0.73 ± 0.56	1.03 ± 0.67	2.5	0.06
Cluster C traits	1.95 ± 0.91	1.96 ± 1.08	2.03 ± 1.24	2.27 ± 0.95	1.0	0.39
All traits	4.52 ± 2.12	4.22 ± 2.87	4.78 ± 1.53	4.77 ± 2.05	0.4	0.71

[*] $\chi^2 = 1.3$; d.f. = 3; $p = 0.72$.
[a] MDMP > MDP, MDM > MD.
[b] MDP, MDMP > MD, MDM.
[c] MDP > MD, MDM, MDMP.
[d] MD > MDP, MDMP.

Logistic regression was used to test whether personality traits or symptom severity were associated with the presence (or absence) of psychotic symptoms. Stepwise analysis was used to evaluate whether personality traits and symptom severity exert an independent and separate effect on the presence of psychotic symptoms.

3. Results

3.1. Sample

The study included 163 inpatients (44 males, and 119 females) with a mean age 46.9 ± 14.2 (range: 18–75 years). The UMD group included 67 patients (40.9%), the MMD group 34 patients (20.7%), the PMD group 21 patients (12.8%) and PMMD group 41 patients (25%). Age and age at onset were similar in the four groups of patients (Table 1).

3.2. Depression severity

Retardation, agitation and total scores of the Ham-D were higher in PMMD than in the other groups of patients and in MMD and PMD than in UMD patients (Table 1).

3.3. Personality features

After remission of a MD episode, schizotypical traits were higher in PMD than in the other groups, whereas paranoid and Cluster A traits were higher in PMD and PMMD patients than in UMD and MMD patients (Table 1). Histrionic and Cluster B traits were higher in UMD than in PMD and PMMD patients (Table 1). Finally, obsessive–compulsive traits were higher in MMD than in UMD patients (Table 1).

3.4. Relationship between psychotic symptoms and personality traits

Stepwise logistic regression showed that in MD patients the presence of psychotic symptoms was positively related to the severity of depression (Ham-D total score) (OR = 1.16; CI 95% = 1.11–1.21) ($p<0.001$), paranoid traits (OR = 5.1; CI 95% = 2.1–12.3) ($p<0.001$) and schizotypal traits (OR = 7.5; CI 95% = 1.2–45.7) ($p=0.02$) and negatively associated with histrionic traits (OR = 0.18; CI 95% = 0.05–0.62) ($p=0.007$) (Table 2). Therefore, this finding suggests that the contribution of paranoid and schizotypal traits to the presence of psychotic symptoms in MD is independent of Ham-D score.

Table 2
Effect of severity of depressive symptoms and personality traits on the presence of psychotic symptoms in major depression (MD).

Presence of psychotic symptoms in MD patients						
	β	Wald's χ^2	p	OR	CI 95%	R^2
Step 1						0.45
Ham-D total score	0.15	44.9	<0.001	1.16	1.11–1.21	
Step 2						0.52
Ham-D total score	0.15	40.4	<0.001	1.17	1.11–1.23	
Paranoid traits	1.64	13.6	<0.001	5.16	2.16–12.3	
Step 3						0.58
Ham-D total score	0.14	32.8	<0.001	1.15	1.10–1.21	
Paranoid traits	2.01	16.4	<0.001	7.46	2.82–19.6	
Histrionic traits	−1.67	7.34	0.007	0.18	0.05–0.62	
Step 4						0.61
Ham-D total score	0.15	33.5	<0.001	1.17	1.11–1.23	
Schizotypal traits	2.01	4.79	0.02	7.52	1.23–45.7	
Paranoid traits	1.39	6.48	0.01	4.05	1.38–11.8	
Histrionic traits	−1.68	7.30	0.007	0.18	0.05–0.62	

4. Discussion

The aim of this study was to verify whether in unipolar MD depressed patients, specific personality features, evaluated after the achievement of remission of the depressive episode, might be associated with psychotic features, after controlling for the severity of depressive symptoms.

To our knowledge, only a few studies have assessed the relationship between personality and psychotic symptoms in unipolar MD and none of them investigated personality and severity as independent variables.

In the present study, more schizotypal and paranoid personality traits were found in MD patients with psychotic symptoms than in MD patients without psychotic features. This difference persisted after controlling for symptom severity. Therefore, our data, confirming the results of previous studies (Charney and Nelson, 1981; Lykouras et al., 1986; Bellini et al., 1992; Serretti et al., 1999), suggest that schizotypal or paranoid traits are associated with psychotic features of a MD episode, regardless of depression severity.

The following three alternative hypotheses could explain these findings: 1) the personality traits are associated with psychotic depression due to the bias in the assessment of personality, because personality evaluation was influenced by the recent depressive episode; 2) the personality traits are a consequence of the depressive episode, because depression induces a change in personality characteristics; and 3) the personality traits represent a predisposition to develop depressive psychotic features.

The first hypothesis is not supported by the recent study of Morey et al. (2010), who pointed out that personality assessment in the course of MD is a valid reflection of personality pathology rather than a transient artifact of mood state on personality. Thus, the frequent observation of personality disorders or dysfunctional personality traits among patients with MD is not to be regarded as a simple bias of confound.

Moreover we considered personality traits rather than disorders, and personality traits, viewed as dimensions, show considerably more stability than disorders (Melartin et al., 2010; Skodol et al., 2010).

Similarly, it can be excluded that the assessment of personality a short time (2 months) after remission of MD may be influenced by the effect of residual depressive symptoms, which were found in 36% of patients after full-blown affective episodes (Cassano and Savino, 1997; Marneros and Rohde, 1997).

In fact, previous studies describe persistent mild cognitive impairment, mood instability, emotional dyscontrol and hypersensitivity to negative events with social and work impairment (Cassano and Savino, 1997), suggesting that an "asthenic insufficiency syndrome" or a "chronic subdepressive syndrome", but not chronic psychosis or paranoid symptoms, can follow a depressive episode (Marneros and Rohde, 1997).

Therefore, schizotypal and paranoid personality traits observed in our remitted MD patients (with complete remission also including psychotic features) cannot be biased by the time of assessment of personality.

Concerning the second hypothesis, it has been suggested that personality abnormalities may be associated with early onset and chronic depression (Robison et al., 2009). This finding could be explained, as some authors claim, by the "scar" effect of depression on personality (Kendler et al., 1993; Fanous et al., 2007), especially for neuroticism levels. Nevertheless, some studies failed to find a personality scar after depression, even in severe forms (Ormel et al., 2004; Jylha et al., 2009). Moreover, it has been suggested that depressive residual symptoms may be confounded with the deterioration of personality (Ormel et al., 2004; Jylha et al., 2009). Finally, to our knowledge no previous study has demonstrated a scar effect on psychoticism or on Cluster A traits, which appear to be more stable (Johnson et al., 2000; Seivewright et al., 2004). Thus, in our study the

personality traits found after the remission of a psychotic MD cannot be viewed as a scar effect.

Therefore, the observation of schizotypal and paranoid traits in our MD patients is not to be regarded as a simple bias of confound or a scar consequence of depression. Rather, it more likely reflects an increased risk for the development of psychotic symptoms when depression occurs.

Thus, our data may suggest that schizotypal and paranoid traits are associated with elevated vulnerability to psychotic symptoms in general and with the appearance of psychotic features in depression in particular, through the effect of the stress associated with depressive symptoms. Moreover, our data confirm that depression exerts an important mediating role in the transition from minor psychotic experiences (i.e. schizotypal and paranoid traits) to full blown psychotic disorder (Yung et al., 2007).

In our study, histrionic traits were negatively related to the presence of psychotic (and melancholic) symptoms in MD, confirming the previous finding of a significant occurrence of Cluster B personality traits, particularly histrionic traits, in non-melancholic, non-psychotic depressive disorders (Charney and Nelson, 1981). These findings suggest that histrionic traits may prevent the appearance of melancholic and psychotic features when an episode of MD occurs.

Overall, our data point out the relevant role of personality features in modeling the clinical presentation of depression, as recently stressed by Parker (2003).

Concerning depression severity, a “continuum” for both global severity and “agitation–retardation” severity was found among the four groups of MD patient, with the UMD patients showing the lowest severity, the PMMD patients showing the highest severity, and the PMD and MMD patients standing in the middle position, with the same severity. When the effect of personality features was controlled, global symptom severity was still associated with the presence of psychotic symptoms in MD patients, confirming that psychotic symptoms may occur in more severe depression, as observed in previous studies (Coryell, 1996, 1997; Lattuada et al., 1999). Nevertheless, our MMD and PMD patients showed the same symptom severity, which indicates a lack of complete overlap between “psychotic depression” and “severe depression”. This result is in line with Schatzberg and Rothschild's (1992) proposal of uncoupling the “severity–psychotic features” binomial.

All together, our data suggest that the presence of psychotic symptoms in MD may be independently associated with both depression severity and a specific personality profile. Therefore, our study confirms that severity cannot be considered the only determinant of the psychotic presentation of depression, as recently suggested by Keller et al. (2007) and Maj (2008).

In conclusion, our data support the view that psychotic symptoms in unipolar depression may be the result of the interaction between severity and personality structure: psychotic symptoms may occur in subjects with high paranoid and schizotypal traits as well as in severe forms of depression.

However, caution should be used in drawing firm conclusions from our results due to the time of assessment of personality, the small sample size and the inclusion of only unipolar patients. Therefore, the present data need to be verified by evaluating subjects before the onset of MD, using larger samples and including both unipolar and bipolar patients.

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