Preliminary communication

Mood-congruent and mood-incongruent psychotic symptoms in major depression: The role of severity and personality

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ABSTRACT

Background: Whether psychotic symptoms in major depression (MD) are better explained by a “severity model” or by a “vulnerability model”, with personality as a predisposing factor, is still debated. The aim of the present study was to evaluate in MD the relationship between the content of psychotic features (mood congruent (MC) or mood incongruent (MI)) and severity of depression or personality traits.

Methods: 62 inpatients affected by MD with psychotic features were divided into three groups on the basis of the content of psychotic symptoms: MC, MI, mixed MC–MI. All subjects completed the SCID-IV, the Structured Clinical Interview for DSM-IV Personality Disorders and the Hamilton Rating Scale for Depression. Personality was assessed after MD remission.

Results: MI psychotic symptoms were positively associated with schizotypal traits, whereas MC symptoms were positively related to obsessive-compulsive traits and severity of depression. Patients with both MC and MI psychotic symptoms were characterized by a personality profile and depression severity standing in a middle position between the MC and MI groups.

Limitations: The main limitations of the study are represented by the small sample size, the time of assessment of personality and the inclusion of only unipolar depression.

Conclusions: Our findings suggest that both depression severity and personality profile, independently from each other, model the content of psychotic symptoms, confirming the validity of subgrouping psychotic depression into two distinct MC and MI types and supporting the inclusion of a third mixed MC–MI type because of its intermediate position in personality profile and severity between the MC or MI group.

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1. Introduction

The importance of distinguishing psychotic symptoms in major depression (MD) as mood-congruent (MC) or mood-incongruent (MI) has been supported by the finding that mood incongruence is a predictor of poor outcome and diagnostic instability (Burch et al., 1994; Fennig et al., 1996; Tsuang and Coryell, 1993), even though more recent studies

failed to replicate these results (Maj, 2008) and suggest “a little specific evidence for this distinction or its relevance” (Keller et al., 2007).

Moreover, the separation of psychotic symptoms in MD into two subtypes uncovers different problems since MC and MI features may coexist in the same episode (Maj, 2008; Maj et al., 2007) and the definition itself of “congruence” with depressed mood is often difficult to evaluate (Keller et al., 2007; Maj, 2008).

However, the broadening of the concept of psychotic depression to include MI subtype allows to consider bizarre or schizophrenic-like delusions or hallucinations (i.e. Schneiderian first rank symptoms) in the context of a full affective syndrome (Kendler, 1991). This view is supported by the lack of

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diagnostic specificity of overall symptoms for schizophrenia, including non-affective positive features (Taylor and Amir, 1994) and Schneiderian first rank symptoms (Mundt, 1995). Therefore, since DSM-III (American Psychiatric Association, 1980), “psychotic depression” is defined by the occurrence of delusions and/or hallucinations only in the presence of a major mood episode regardless to the form or the content of psychotic symptoms. This reconceptualization raises the question if psychotic symptoms (specifically MI delusions) in a depressive episode may be better explained by a “severity model”, as suggested in DSM-IV-TR (American Psychiatric Association, 2000) which identifies in MD a severe form with psychotic features, or by a “vulnerability model” in which personality characteristics predispose to the psychotic presentation of MD (Harrow et al., 2000). Our previous study (Tonna et al., 2011) argues against a rigid association between “severity” and “psychotic symptoms” and suggests that a specific personality profile (schizotypal and paranoid traits) and severity are independently associated with the psychotic presentation of MD.

Concerning the distinction between MC and MI symptoms, the studies are scarce and the existing ones are difficult to compare because they used different diagnostic classification systems, different definitions of mood congruence and different criteria for classifying patients with both MC and MI delusions (Fennig et al., 1996). Moreover, to our knowledge, only one study (Bellini et al., 1992) investigated the relationship between mood congruence of psychotic symptoms and personality profile in patients with MD. This study found that MI delusions (persecutory/paranoid) were more frequent in patients with personality disorders (PDs) of odds cluster, compared to the other PD clusters.

Therefore the present study was aimed to evaluate the relationship between severity of depression, personality pattern and the occurrence of MC and MI psychotic symptoms in patients with MD. Particularly, we wanted to verify the hypothesis that in MD the incongruence of psychotic symptoms may be associated with a peculiar personality profile while MC symptoms may be associated with the severity of depression.

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 with psychotic features.

Patients were included in the study if: 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: 1) current mental disorders related to a general medical condition; 2) cognitive impairment (Mini-Mental State Examination score lower than 25) which interfered with the ability to 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) (Pfohl et al., 1995) and the 17-item Hamilton Rating Scale for Depression (HAM-D) (Hamilton, 1960).

The SCID-IV and the 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).

In the training phase for personality assessment, videotape recordings of patients with PD were used and a good inter-rater reliability was obtained, since the K values ranged from 0.91 for schizotypal PD to 0.79 for borderline PD (i.e. paranoid PD $k = 0.86$; obsessive-compulsive PD $k = 0.82$). The interviewers who administered the SIDP-IV were blind to the group to which each patient belonged.

According to the criteria of the DSM-IV, three groups of psychotic depressive patients were considered: 1) MD with MC psychotic features; 2) MD with MI psychotic features; 3) MD with mixed MC and MI psychotic features. The evaluation of mood congruence was consistent with DSM-IV-TR guidelines. Namely, MC symptoms included delusions of guilt, poverty, punishment, nihilism and illness and any related hallucinations such as self-deprecatory voices. MI symptoms included delusions or hallucinations the content of which was unrelated to depressive themes. As noted above, mood congruence was difficult to evaluate in some cases (i.e. persecutory delusions) and therefore we decided to label as “incongruent” psychotic themes whose congruency was uncertain.

Three scores of HAM-D were considered: the total score as a measure of global severity of depression and the “retardation” and the “agitation” item score as a measure of psychomotor disturbance, which is considered a marker of “endogeneity” (Parker et al., 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 purpose (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 an association of antidepressants and antipsychotics.

2.2.2. Remission criteria

Patients were defined in complete remission if, for at least two 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 three groups of psychotic depressive patients.

Logistic regression was used to test whether personality traits or symptoms severity were associated to the content (congruent or incongruent) of delusional themes. Patients with both mood-congruent and mood-incongruent psychotic symptoms were excluded from the regression analysis.

3. Results

3.1. Sample

From the original sample of 97 inpatients with unipolar psychotic depression, 62 (64%) reached the remission of depressive episode. Therefore the present study included 62 patients, 43 females (69.4%) and 19 males (30.6%), with a mean age of 47.2 ± 14.2 yrs. (range 21–71 yrs.). The MC group included 29 patients (46.8%), the MI 21 patients (33.9%) and the mixed MC–MI group 12 patients (19.4%). Age and age of onset were similar in the three groups of patients (Table 1).

3.2. Depression severity

Retardation, agitation and total scores of the HAM-D were higher in MC–MI and MC groups than in MI patients (Table 1).

3.3. Personality features

After remission of a MD episode, schizotypal traits and cluster A traits were higher in MI patients than in MC patients, whereas obsessive-compulsive (OC) traits were higher in MC group than in MI one (Table 1).

3.4. Relation between mood congruence of psychotic symptoms, severity of depression and personality traits

Stepwise logistic regression showed that the presence of MI psychotic symptoms, compared with the presence of MC psychotic symptoms, was positively associated with schizotypal traits (OR = 54.5; CI95% = 1.43–208.6) ($p = 0.03$) and negatively related with the severity of depression (Ham-D total score) (OR = 0.77; CI95% = 0.68–0.87) ($p < 0.001$) and OC traits (OR = 0.04; CI95% = 0.002–0.98) ($p = 0.04$) (Table 2). This finding suggests that the contribution of personality features (OC and schizotypal traits) to the content of psychotic symptoms (MC vs MI) was independent from the effect of severity of depression (HAM-D total score).

4. Discussion

The present study was aimed to evaluate in patients with unipolar MD the relationship between MC and MI psychotic symptoms on the one hand and the severity of depression and personality profile on the other hand. Specifically, we wanted to verify whether MI psychotic symptoms may be associated with a peculiar personality profile while MC symptoms may be better explained by the severity of depression.

Concerning personality profile, cluster A traits, specifically schizotypal traits, were more frequent in MI than in MC subtype of MD patients. This difference persisted after controlling for the severity of depression. Moreover, the presence of schizotypal traits was related to the psychotic presentation of MD with MI features, compared to the presentation with MC features. Our results, confirming the study of Bellini et al. (1992), suggest an association between schizotypal traits and MI psychotic symptoms. Since Schizotypal Personality

Table 1

The severity of symptoms and the personality traits in patients with major depression with psychotic features.

	Major depression with mood congruent psychotic features	Major depression with mood incongruent psychotic features	Major depression with mood congruent and incongruent psychotic features	One-way ANOVA with Bonferroni post-hoc analysis df = 2, 59	
	n.29	n.21	n.12	F	P
Age	45.2 ± 13.0	49.7 ± 15.7	47.5 ± 14.8	0.6	0.54
Age at onset	34.0 ± 12.6	38.0 ± 15.3	31.8 ± 7.8	1.0	0.37
Ham total score	43.4 ± 5.4	27.6 ± 8.2	41.5 ± 2.0	44.2	<0.001 ^a
Ham retardation score	3.2 ± 0.7	1.2 ± 1.4	3.0 ± 0.7	23.7	<0.001 ^a
Ham agitation score	3.5 ± 0.9	2.2 ± 1.0	3.1 ± 1.2	8.4	0.001 ^a
Personality features					
Paranoid traits	0.82 ± 0.57	1.12 ± 0.58	0.94 ± 0.55	1.6	0.20
Schizoid traits	0.23 ± 0.33	0.40 ± 0.44	0.45 ± 0.67	1.3	0.27
Schizotypal	0.21 ± 0.22	0.57 ± 0.40	0.42 ± 0.56	5.9	0.004 ^b
Cluster A traits	1.27 ± 0.91	2.10 ± 0.90	1.82 ± 1.53	3.9	0.025 ^b
Antisocial traits	0.00 ± 0.00	0.02 ± 0.10	0.00 ± 0.02	0.8	0.44
Borderline traits	0.33 ± 0.49	0.26 ± 0.39	0.44 ± 0.50	0.5	0.59
Histrionic traits	0.28 ± 0.34	0.30 ± 0.42	0.12 ± 0.15	1.1	0.32
Narcissistic traits	0.36 ± 0.39	0.25 ± 0.32	0.29 ± 0.34	0.6	0.52
Cluster B traits	0.98 ± 0.90	0.84 ± 1.01	0.86 ± 0.74	0.1	0.84
Avoidant traits	0.55 ± 0.54	0.70 ± 0.65	1.00 ± 0.80	2.1	0.12
Dependent traits	0.55 ± 0.43	0.50 ± 0.41	0.75 ± 0.42	1.4	0.24
Obsessive-Compulsive traits	1.11 ± 0.78	0.68 ± 0.46	0.90 ± 0.37	2.9	0.05 ^c
Cluster C traits	2.22 ± 0.98	1.08 ± 1.01	2.66 ± 1.19	2.1	0.12
All traits	4.49 ± 1.55	4.84 ± 1.64	5.36 ± 2.28	0.9	0.40

^a MC, MC–MI > MI.

^b MI > MC.

^c MC > MI.

Table 2

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

Psychotic symptoms						
Mood incongruent (1) vs mood congruent (0)						
	β	χ^2_{wald}	p	OR	CI 95%	R ²
Step 1						0.69
Ham-D total score	−0.25	16.0	<0.001	0.77	0.68–0.87	
Step 2						0.77
Ham-D total score	−0.27	11.5	0.001	0.75	0.64–0.88	
Schizotypal traits	4.00	4.6	0.03	54.5	1.43–208.6	
Step 3						0.84
Ham-D total score	−0.34	8.8	0.003	0.71	0.56–0.89	
Schizotypal traits	5.24	5.4	0.021	190.4	2.3–1570.8	
Obsessive-compulsive traits	−3.06	3.8	0.040	0.04	0.002–0.98	

Patients with both mood-congruent and mod-incongruent psychotic symptoms (n.12) were excluded from the analysis.

Disorder shares common genetic, biological and phenomenological characteristics with schizophrenia (Siever and Davis, 2004), our finding supports the view that MD patients with MI psychotic symptoms might represent a distinct subtype of mood disorder. This hypothesis is also supported by the high rate of schizophrenia in relatives of MD patients with MI psychotic symptoms found in a previous study (Kendler, 1991). However, our study suggests that schizotypal traits may act as a modeling factor for the psychotic presentation of MD: subjects with schizotypal traits can develop MI psychotic symptoms when an episode of MD occurs.

Conversely, more obsessive-compulsive (OC) traits were found in MC than in MI subtype of MD patients, suggesting an association between OC traits and MC psychotic features. This difference persisted after controlling for the severity of depression. Moreover, the presence of OC traits was related to the psychotic presentation of MD with MC features, compared to the presentation with MI features. OC Personality Disorder appears to have a relatively close relationship to Tellenbach's melancholic type of personality (Sato et al., 1996) which is associated with specific psychopathological features of depression such as guilt feelings and lack of social drive (Stanghellini et al., 2006). Therefore, OC traits may refer to a characterological liability to typical affective themes such as guilt, poverty, punishment, nihilism and illness. It is noteworthy that in our study OC traits seem to play a protective role against the development of MI psychotic symptoms, thus enforcing the hypothesis of an association between OC traits and typical delusional affective contents.

Interestingly, MD patients with both MC and MI psychotic symptoms are characterized by a personality pattern which stands in a middle position between the MC and MI subgroups with cluster A traits (particularly the schizotypal ones) higher than MC subgroup and OC traits higher than MI subgroup.

As argued in our previous study (Tonna et al., 2011), the observation of schizotypal or obsessive-compulsive traits in our MD patients with MI or MC psychotic symptoms 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 MI or MC psychotic symptoms when depression occurs.

In conclusion, our results let to hypothesize a role of personality (specifically schizotypal and obsessive-compulsive traits) in shaping the content of psychotic symptoms (respectively MI or MC) in unipolar MD regardless to severity.

Concerning depression severity, patients with MC psychotic symptoms (both MC and MC–MI patients) have higher scores of both global and “agitation–retardation” severity than MI patients. This difference persisted after controlling for the effect of personality traits. Moreover, the Ham-D total score was related to the psychotic presentation of MD with MC features, compared to the presentation with MI features.

These results suggest that: first, psychotic symptoms (specifically MI) may occur also in mild or moderate forms of depression, thus supporting the DSM-V proposal of uncoupling the binomial “severity-psychotic symptoms” in unipolar MD; second, MC psychotic symptoms are strongly associated with MD severity because the global severity of depressive episode was associated with the presence of MC psychotic symptoms regardless to personality.

Taken together our results suggest a dimensional model in which both personality profile and severity of depression play a role in modeling the content of psychotic symptoms in unipolar MD; the first dimension is represented by personality traits with schizotypal traits which drive the development of MI psychotic symptoms and OC traits which predispose to MC psychotic features. The second dimension is characterized by severity: the more severe is MD, the more frequent the presence of MC delusional themes. Therefore, when the two dimensions interact, both MC and MI themes occur if patients with schizotypal traits develop a severe depressive episode, whereas only MI psychotic features occur if they develop a mild depressive episode. So the mixed MC–MI subtype lies at the crossing point of these two distinct dimensions (personality pattern and severity of depression). Therefore a “vulnerability model” may coexist with a “severity model”.

The present study gives a clinical foundation to the effort of classifying psychotic depression into two subtypes (MC and MI subtypes), in line with Kendler's historical review (1991) up to the more recent DSM editions (DSM-III, DSM-IV, DSM-IV-TR) (American Psychiatric Association, 1980, 1994, 2000): MC subtype is associated with the presence of OC personality traits and/or a more severe depressive episode; MI subtype is characterized by high schizotypal traits, low OC traits and a mild or moderate severity of depression. Moreover, our results suggest to distinguish mixed MC–MI depressions as a third distinct subtype with schizotypal and OC traits lying in the middle between the previous subtypes but with a severe MD episode, supporting the view of the

diagnostic validity of a mixed MC–MI subtype (Maj, 2008; Maj et al., 2007).

However, caution should be used in drawing firm conclusions from our results due to the small sample size, particularly for MC–MI group, the time of assessment of personality and the inclusion of only unipolar depressive patients. 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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Conflict of interest

No authors had financial, personal or other relationship with other people or organizations within three years of beginning the work submitted that could inappropriately influence, or be perceived to influence, their work.

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