Phenomenology and Prognostic Significance of Delusions in Major Depressive Disorder: A 10-Year Prospective Follow-Up Study

Mario Maj, M.D., Ph.D.; Raffaele Pirozzi, M.D.; Lorenza Magliano, M.D., Ph.D.; Andrea Fiorillo, M.D., Ph.D.; and Luca Bartoli, M.D.

Objective: The study explored the phenomenology and prognostic significance of delusions in major depressive disorder.

Method: From 452 patients with DSM-III major depression, we selected those with at least one belief fulfilling both DSM-III prerequisites for a delusion (i.e., being of "delusional proportions" and being maintained with "delusional intensity"). These patients were compared to the others with respect to demographic, historical, and index episode features; time spent in a depressive episode during a prospective observation period; and 10-year outcome. The same comparisons were made between patients with mood-incongruent delusions and those with mood-congruent delusions only. The study covered the period between January 1, 1978, and December 31, 2005.

Results: About 20% of patients had at least one delusion in their index episode. An additional 5.3% had a belief fulfilling only one of the DSM-III prerequisites for a delusion. In about one quarter of delusional patients, the index episode was not "severe." Almost 10% of delusional patients had both mood-congruent and mood-incongruent delusions. In patients with delusions, time to syndromal recovery from index episode was longer and antipsychotic medication was more frequently used (both $p < .0001$). The presence of delusions predicted a higher depressive morbidity during the prospective observation period ($p < .05$), but not a poorer 10-year outcome. No variable discriminated patients with mood-incongruent delusions from those with mood-congruent delusions only.

Conclusion: The presence of delusions in a major depressive episode has significant therapeutic and short-term prognostic implications. However, the boundary between delusions and nondelusional sustained preoccupations is somewhat fuzzy, and some DSM-IV assumptions concerning psychotic depression (i.e., that this depression is always "severe"; that in an individual patient, delusions will be either all congruent or all incongruent with depressed mood; and that mood-incongruent delusions are associated with a poorer prognosis) may be unwarranted.

(J Clin Psychiatry 2007;68:1411–1417)

Received Oct. 12, 2006; accepted Dec. 7, 2006. From the Department of Psychiatry, University of Naples SUN, Naples, Italy.

The authors report no financial affiliations or other relationships relevant to the subject of this article.

Corresponding author and reprints: Prof. Mario Maj, M.D., Ph.D., Department of Psychiatry, University of Naples SUN, Largo Madonna delle Grazie, 80138 Naples, Italy (e-mail: majmario@tin.it).

Delusions are a common symptom in major depressive disorder, occurring in about 25% of hospitalized patients and almost 15% of cases in the community.[1,2] According to the DSM-IV,[3] depressive thoughts do not constitute a delusion unless "the judgment is so extreme as to defy credibility"[3(p765)] (i.e., the belief is of "delusional proportions") and unless the patient is unable "to acknowledge the possibility that the belief may not be true"[3(p769)] (i.e., the belief is maintained with "delusional intensity").

In the DSM-IV, the presence of delusions in a major depressive episode can be recorded using the specifier "severe with psychotic features," with the possibility to further specify whether the delusions are "mood-congruent" or "mood-incongruent." Thus, the DSM-IV seems to assume that any delusional depression will also be "severe" and that, in an individual patient, delusions will be either all congruent or all incongruent with depressed mood. Moreover, the manual assumes that the presence of psychotic features and their mood-incongruent nature have significant prognostic implications: in fact, it states that "suicide risk is especially high for individuals with psychotic features"[3(p323)] and that mood-incongruent psychotic features "are associated with a poorer prognosis."[3(p377)]

The above DSM-IV assumptions are not consistently supported by the available research evidence. Delusions have been found to occur also in subjects whose major depressive episode is either mild or moderate.[4] Mood-congruent and mood-incongruent delusions have been found to coexist in several depressed patients.[5–7] The association between the occurrence of psychotic symptoms and suicide risk is controversial,[8–10] and one group reported that the risk for suicide was significantly higher in patients with "mood-congruent depressive preoccupations or delusions," but not in those with DSM-III-R–

© COPYRIGHT 2007 PHYSICIANS POSTGRADUATE PRESS, INC

defined psychotic features.[11] Finally, the prognostic significance of the presence of psychotic symptoms or of their mood-incongruent nature has not been consistently confirmed.[2,12–16]

Since the validity of the "psychotic" specifier in mood disorders is being discussed again within the frame of the DSM-IV revision,[17,18] a further investigation of the phenomenology and prognostic significance of delusions in major depressive disorder seems to be timely.

METHOD

Subjects and Procedures

The study was carried out with 452 consecutive new inpatients and outpatients seen at the Center for Affective Disorders of the First Psychiatric Department of Naples University, who fulfilled DSM-III criteria for major depression and gave written informed consent to participate. The protocol was approved by the university's review board. The diagnosis was ascertained by the Schedule for Affective Disorders and Schizophrenia (SADS),[19] supplemented by a clinical interview to convert Research Diagnostic Criteria[20] into DSM-III diagnoses. The assessment was carried out by trained psychiatrists whose interrater reliability had been found to be satisfactory.[21] A history of manic or hypomanic episodes was an exclusion criterion.

The symptomatological features of the index episode were assessed before treatment was started, using the Comprehensive Psychopathological Rating Scale (CPRS),[22] administered by trained psychiatrists whose interrater reliability had been found to be satisfactory.[21] The CPRS includes 4 items that are relevant to the ascertainment of delusions in depressed patients: "pessimistic thoughts" ("representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin"); "hypochondriasis" ("representing exaggerated preoccupation or unrealistic worrying about ill health or disease"); "ideas of persecution" ("representing suspiciousness, exaggerated self-consciousness, the conviction of being talked about or watched or persecuted with malicious intent"); and "feeling controlled" ("representing the experience of being in the literal sense influenced or controlled from without, and the experience that feelings, impulses or volitions are imposed from without"). The score on each item ranges from 0 to 3. A score of 1 corresponds to "fluctuating ideas" or "vague feelings"; a score of 2 corresponds to "persistent ideas" or "pervasive feelings" that are "still rational" and about which the patient "can be reassured, if only briefly"; a score of 3 corresponds to ideas that are "absurd" and "unalterable." Thus, a belief of "delusional proportions" and maintained with "delusional intensity" (i.e., a delusion according to DSM-III and DSM-IV) will receive a score of 3.

The following demographic and historical variables were recorded for each patient: gender, age at recruitment, age at first psychiatric contact, number of previous psychiatric hospitalizations, history of suicide attempts, history of bipolar I disorder in first-degree relatives (as assessed by Family History Research Diagnostic Criteria[23]), and co-occurrence of alcoholism or drug abuse. Treatment received during the index episode and time to syndromal recovery from that episode were also recorded. Syndromal recovery was defined as a period of at least 8 consecutive weeks during which the patient did not fulfill DSM-III criteria for major depression.

As long as they attended the center, all patients were examined every second month, using the CPRS and the version of the SADS for measuring change (SADS-C),[24] supplemented by a clinical interview to convert Research Diagnostic Criteria into DSM-III diagnoses. New episodes were recorded. Treatment was not under the control of the researchers, but was carefully recorded at each visit. Ten years after recruitment, all patients, whether or not they were still attending the center, were contacted for a brief interview, during which the Strauss-Carpenter Outcome Scale[25] was administered by trained psychiatrists who were not aware of the group to which each patient belonged.[26]

The study covered the period between January 1, 1978, and December 31, 2005.

Data Analysis

The recruited patients were subdivided into 3 groups: those with delusions in their index episode (i.e., with a score of 3 on at least one among the CPRS items "pessimistic thoughts," "hypochondriasis," "ideas of persecution," and "feeling controlled"); those with sustained preoccupations but not delusions in their index episode (i.e., with no score of 3 but at least one score of 2 on the above CPRS items); and those without either delusions or sustained preoccupations (i.e., with no score of 3 or 2 on the above CPRS items). These groups were compared, using χ^2 or analysis of variance as appropriate, with respect to demographic, historical, and index episode features.

A multiple linear regression analysis was computed in all patients in order to explore the simultaneous effects of several variables on time to syndromal recovery from the index episode. These variables included presence of delusions in the index episode, presence of mood-incongruent delusions in the index episode, presence of sustained preoccupations but not delusions in the index episode, number of previous psychiatric hospitalizations, history of suicide attempts, and family history of bipolar I disorder. The last 3 variables were selected because they differentiated among the 3 patient groups on univariate analyses.

Multiple linear regression analyses were performed in all patients in order to explore the simultaneous effects of several variables on the percentage of time spent in a depressive episode during the prospective observation period (whatever its duration), and on the global score of the Strauss-Carpenter Outcome Scale at the 10-year follow-

up interview. These variables included presence of delusions in the index episode, presence of mood-incongruent delusions in the index episode, presence of sustained preoccupations but not delusions in the index episode, number of previous psychiatric hospitalizations, history of suicide attempts, family history of bipolar I disorder, whether the index episode was "severe" (i.e., characterized by several symptoms in excess of those required to make the diagnosis and by a marked interference with social functioning), presence of psychomotor agitation in the index episode, presence of perplexity in the index episode, use of antipsychotic medication during the index episode, and time to syndromal recovery from the index episode. The last 8 variables were selected because they differentiated among the 3 patient groups on univariate analyses.

Cohen's κ coefficient was used to explore the consistency between the index episode and each depressive episode recorded during the prospective observation period with respect to the presence or absence of delusions.

A multiple logistic regression analysis was performed in all patients in order to test whether the occurrence of a DSM-III manic or hypomanic episode during the prospective observation period (i.e., a switch to bipolarity) was associated with the following variables: gender, age at recruitment, age at first psychiatric contact, family history of bipolar I disorder, presence of delusions in the index episode, presence of mood-incongruent delusions in the index episode, presence of sustained preoccupations but not delusions in the index episode, and time to syndromal recovery from the index episode.

In all analyses, the level of significance was set at $p < .05$, 2-tailed probability.

RESULTS

Of the 452 evaluated patients (61 inpatients and 391 outpatients), 89 (19.7%) had a score of 3 on at least one among the CPRS items "pessimistic thoughts," "hypochondriasis," "ideas of persecution," and "feeling controlled" (i.e., at least one of their beliefs fulfilled both DSM-III prerequisites for delusions). Delusions of personal inadequacy, guilt, or ruin were present in 56 patients (12.4%); hypochondriacal delusions in 16 (3.5%); persecutory delusions in 30 (6.6%); and delusions of being controlled or influenced in 11 (2.4%). Thirty patients had, in addition to 1 or more delusions, at least one sustained preoccupation that was not delusional (i.e., they had a score of 2 on one or more of the above-mentioned CPRS items).

Fifty-eight patients (12.8% of the total sample) had only mood-congruent delusions; 13 (2.9%) had only mood-incongruent delusions; 8 (1.8%) had both mood-congruent and mood-incongruent delusions; 5 (1.1%) had both mood-congruent delusions and delusions whose mood congruence was uncertain; 5 (1.1%) had only delusions whose mood congruence was uncertain. All delusions whose mood congruence was uncertain were persecutory.

Of the 452 evaluated patients, 123 (27.2%) had no delusion, but at least one sustained preoccupation (i.e., a score of 2 on at least one of the above-mentioned CPRS items). In 24 patients (5.3% of the total sample), the score was 2 because the belief fulfilled only one of the DSM-III prerequisites for delusions (i.e., it was of "delusional proportions" but was not maintained with "delusional intensity," or vice versa).

Patients with delusions in their index episode did not differ significantly from the other patient groups with respect to gender, age at recruitment, and age at first psychiatric contact. Both patients with delusions and those with sustained preoccupations but not delusions had a higher number of prior psychiatric hospitalizations than the other patients. Patients with delusions had a higher number of prior psychiatric hospitalizations than those with sustained preoccupations but not delusions. Patients with delusions were more likely to have a family history of bipolar I disorder than those without either delusions or sustained preoccupations (Table 1).

The index episode was more likely to be "severe" in patients with delusions than in both those with sustained preoccupations but not delusions and those without either delusions or sustained preoccupations. However, the index episode was either mild or moderate in 21 patients with delusions (23.6%). Patients with delusions, as compared to those without either delusions or sustained preoccupations, were more likely to show psychomotor agitation and perplexity and to receive antipsychotic medication during the index episode. The occurrence of perplexity and the use of antipsychotics were also more frequent in patients with delusions than in those with sustained preoccupations but not delusions. On the other hand, patients with sustained preoccupations but not delusions were more likely to receive antipsychotics than those without either delusions or sustained preoccupations (Table 1).

There was no significant difference between patients with mood-congruent delusions only and those with mood-incongruent delusions with respect to any demographic, historical, or index episode variable (Table 2).

The multiple linear regression analysis showed that a longer time to syndromal recovery from the index episode was associated with the presence of delusions ($p < .0001$), the presence of sustained preoccupations but not delusions ($p < .01$), and a family history of bipolar I disorder ($p < .02$) (F of the model = 8.7, df = 6,445; $p < .0001$).

Seventy-two patients with delusions in their index episode had at least one further depressive episode during the prospective observation period: 45 of them (62.5%) had only episodes with at least one delusion, and 54 (75.0%) had only episodes with at least one delusion and/or sustained preoccupation. Eighty-eight patients with sus-

Table 1. Demographic, Historical, and Index Episode Characteristics of Patients Fulfilling DSM-III Criteria for Major Depression (MD) With Delusions, With Sustained Preoccupations but Not Delusions, and Without Either Delusions or Sustained Preoccupations

Characteristic	Patient Groups: MD With Delusions (N = 89)	Patient Groups: MD With Sustained Preoccupations (N = 123)	Patient Groups: MD Without Delusions or Sustained Preoccupations (N = 240)	Significant Pairwise Comparisons[a]: MD With Delusions vs MD With Sustained Preoccupations		MD With Delusions vs MD Without Delusions or Sustained Preoccupations		MD With Sustained Preoccupations vs MD Without Delusions or Sustained Preoccupations	
				Statistic	p Value	Statistic	p Value	Statistic	p Value
Age at recruitment, mean (SD), y	45.2 (8.9)	45.7 (8.6)	44.5 (7.9)	F = 0.18	NS	F = 0.5	NS	F = 1.8	NS
Age at first psychiatric contact, mean (SD), y	33.6 (6.4)	33.2 (5.6)	32.5 (5.8)	F = 0.20	NS	F = 2.0	NS	F = 1.1	NS
Prior hospitalizations, mean (SD)	3.9 (1.8)	3.3 (1.7)	2.7 (1.2)	F = 4.6[b]	< .03	F = 46.9[c]	< .0001	F = 18.4[d]	< .0001
Time to syndromal recovery from index episode, mean (SD), wk	13.5 (5.3)	10.8 (5.2)	9.5 (4.6)	F = 14.0[b]	< .0001	F = 45.2[c]	< .0001	F = 5.8[d]	< .02
Female gender, N (%)	55 (61.8)	76 (61.8)	145 (60.4)	χ^2 = 0.001	NS	χ^2 = 0.05	NS	χ^2 = 0.06	NS
History of suicide attempts, N (%)	24 (27.0)	35 (28.5)	44 (18.3)	χ^2 = 0.06	NS	χ^2 = 2.9	NS	χ^2 = 4.9[e]	< .03
Family history of bipolar I disorder, N (%)	14 (15.7)	11 (8.9)	17 (7.1)	χ^2 = 2.3	NS	χ^2 = 5.7 [e]	< .02	χ^2 = 0.4	NS
Concomitant alcoholism or drug abuse, N (%)	8 (9.0)	6 (4.9)	14 (5.8)	χ^2 = 1.4	NS	χ^2 = 1.0	NS	χ^2 = 0.1	NS
"Severe" index episode, N (%)	68 (76.4)	32 (26.0)	63 (26.3)	χ^2 = 52.6[e]	< .0001	χ^2 = 68.1[e]	< .0001	χ^2 = 0.002	NS
Agitation in index episode, N (%)	33 (37.1)	32 (26.0)	43 (17.9)	χ^2 = 3.0	NS	χ^2 = 13.4[e]	< .0001	χ^2 = 3.2	NS
Perplexity in index episode, N (%)	15 (16.9)	8 (6.5)	8 (3.3)	χ^2 = 5.7[e]	< .02	χ^2 = 18.2[e]	< .0001	χ^2 = 1.9	NS
Antipsychotic medication during index episode, N (%)	70 (78.7)	27 (22.0)	28 (11.7)	χ^2 = 66.9[e]	< .0001	χ^2 = 139.3[e]	< .0001	χ^2 = 6.7[e]	< .01

[a]Performed for variables for which a significant difference among the 3 patient groups was found.
[b]df = 1,210.
[c]df = 1,327.
[d]df = 1,361.
[e]df = 1.
Abbreviation: NS = not significant.

tained preoccupations but not delusions in their index episode had at least one further depressive episode during the prospective observation period: 48 of them (54.5%) had only episodes with at least one sustained preoccupation, and 11 (12.5%) had delusions in at least one episode. The Cohen's κ coefficient exploring the consistency of the presence or absence of delusions from one depressive episode to the other ranged from 0.52 to 0.72.

The percentage of time spent in a depressive episode during the prospective observation period was significantly longer in patients with delusions in their index episode (p < .05), but not in those with sustained preoccupations but not delusions (F of the model = 3.7, df = 11,440; p < .0001).

A manic or hypomanic episode during the prospective observation period was observed in 10.1% of patients with delusions in their index episode, 3.2% of patients with sustained preoccupations but not delusions, and 5.0% of those without either delusions or sustained preoccupations (χ^2 = 4.9, df = 2, p < .08). On multiple logistic regression analysis, this switch to bipolarity was significantly associated with an earlier first psychiatric contact (p < .002) and a family history of bipolar I disorder (p < .0001), but not with the presence of delusions in the index episode (χ^2 of the model = 32.0, df = 7, p < .0001). Two out of 21 patients with mood-incongruent delusions in their index episode (9.5%) had one episode fulfilling DSM-IV criteria for schizoaffective disorder during the prospective observation period.

The 10-year follow-up interview was possible in 66 patients with delusions in their index episode (74.2%), 94 patients with sustained preoccupations but not delusions (76.4%), and 171 patients without either delusions or sustained preoccupations (71.3%). Patients in whom the follow-up interview was possible did not differ significantly from the others with respect to any demographic, historical, or index episode variable. On multiple linear regression analysis, no variable was found to have

Table 2. Demographic, Historical, and Index Episode Characteristics of Patients Fulfilling DSM-III Criteria for Major Depression (MD) With Mood-Congruent Delusions Only vs. Those With Mood-Incongruent Delusions

Characteristic	Patient Groups: MD With Mood-Congruent Delusions Only (N = 58)	Patient Groups: MD With Mood-Incongruent Delusions (N = 21)	Analysis: Statistic	Analysis: df	Analysis: p Value
Age at recruitment, mean (SD), y	46.0 (9.0)	42.8 (9.1)	F = 1.8	1,77	.18
Age at first psychiatric contact, mean (SD), y	33.9 (6.1)	31.8 (6.9)	F = 1.8	1,77	.19
Prior hospitalizations, mean (SD)	3.8 (1.8)	3.9 (1.8)	F = 0.1	1,77	.75
Time to syndromal recovery from index episode, mean (SD), wk	13.1 (6.0)	14.4 (3.7)	F = 0.8	1,77	.38
Female gender, N (%)	37 (63.8)	13 (61.9)	$\chi^2 = 0.02$	1	.88
History of suicide attempts, N (%)	13 (22.4)	9 (42.9)	$\chi^2 = 3.2$	1	.07
Family history of bipolar I disorder, N (%)	9 (15.5)	3 (14.3)	$\chi^2 = 0.02$	1	.89
Concomitant alcoholism or drug abuse, N (%)	6 (10.3)	2 (9.5)	$\chi^2 = 0.01$	1	.91
"Severe" index episode, N (%)	46 (79.3)	15 (71.4)	$\chi^2 = 0.5$	1	.46
Agitation in index episode, N (%)	20 (34.5)	10 (47.6)	$\chi^2 = 1.1$	1	.29
Perplexity in index episode, N (%)	11 (19.0)	3 (14.3)	$\chi^2 = 0.2$	1	.63
Antipsychotic medication during index episode, N (%)	41 (70.7)	19 (90.5)	$\chi^2 = 3.3$	1	.07

a significant effect on the global score of the Strauss-Carpenter Outcome Scale (F of the model = 1.2, df = 11,319; p = .25).

Seven patients with delusions in their index episode (7.9%), 7 with sustained preoccupations but not delusions (5.7%), and 12 without either delusions or sustained preoccupations (5.0%) died during the prospective observation period ($\chi^2 = 0.98$, df = 2, $p < .06$). There were 2 cases of ascertained suicide among patients with delusions in their index episode, 3 cases among those with sustained preoccupations but not delusions, and 2 cases among those without either delusions or sustained preoccupations. These cases were too few to allow a meaningful statistical analysis.

DISCUSSION

Our study confirms that delusions and sustained preoccupations are common in major depressive disorder. They may coexist in a depressive episode, and the differentiation between them may be difficult. Twenty-four of our patients (5.3% of the total sample) had a belief fulfilling 1 of the DSM-III prerequisites for delusions, but not the other (i.e., the belief was of "delusional proportions" but was not maintained with "delusional intensity," or vice versa): we recorded such a belief as a nondelusional sustained preoccupation, but similar beliefs may be regarded as delusions in clinical practice and in other studies. Moreover, the "delusional intensity" of a belief may fluctuate within a depressive episode: we classified a belief as delusional only if it was consistently maintained with "delusional intensity" throughout the index episode before treatment was started (i.e., the patient was consistently unable to acknowledge the possibility that the belief might not be true), but in clinical practice or in other studies, a belief may be regarded as a delusion even if the "delusional intensity" has been present only for "most of the time."

In one third of our patients with persecutory delusions, we were unable to decide whether the delusion was mood-congruent or mood-incongruent. This problem has been already reported in the literature,[27] but without quantitative data. Moreover, almost 10% of our delusional patients had both mood-congruent and mood-incongruent delusions, in line with some previous reports.[5–7]

Our data confirm that delusional depression tends to be "severe." However, in about one quarter of our delusional patients, the intensity of the depressive episode was either mild or moderate, thus confirming the findings of Ohayon and Schatzberg.[4]

Our data show that the presence of delusions in a major depressive episode has significant therapeutic and short-term prognostic implications: patients with delusions are significantly more likely to receive antipsychotic medication during their index episode, and the time to syndromal recovery from that episode is significantly longer. With respect to the above 2 variables, major depression with nondelusional sustained preoccupations holds an intermediate position between delusional depression and major depression without either delusions or sustained preoccupations. On the other hand, delusional depression is significantly more likely to be "severe" than major depression with nondelusional sustained preoccupations, whereas the latter does not differ significantly in this respect from major depression without either delusions or sustained preoccupations. Furthermore, there are some symptomatological features—i.e., psychomotor agitation and perplexity—the frequency of which is significantly increased in delusional depression but not in major depression with nondelusional sustained preoccupations.

The presence of delusions (but not of sustained preoccupations) during the index episode was associated with a more frequent family history of bipolar I disorder, thus confirming the findings by Weissman et al.[28] The occurrence of a manic or hypomanic episode during the pro-

spective observation period (i.e., a switch to bipolarity) was significantly associated with an earlier first psychiatric contact and a family history of bipolar I disorder, but not with the presence of psychotic symptoms during the index episode, thus only partially replicating the results obtained by Akiskal et al.[29]

Our study confirms that delusions tend to recur from one depressive episode to the other, although the interepisode consistency in this respect was lower than that reported in other, mostly retrospective, studies.[30] Moreover, we found that 12.5% of patients with sustained preoccupations but not delusions in their index episode developed delusions in at least one episode during the prospective observation period.

The presence of delusions (but not of sustained preoccupations) during the index episode was associated with a higher depressive morbidity during the prospective observation period, but not with a significantly worse outcome at the 10-year follow-up interview. This may indicate that the prognostic significance of delusions in major depression tends to become weaker in the long term, in line with the observation by Coryell and Tsuang.[13] Due to the low number of completed suicides during the follow-up period, we were unable to verify whether the occurrence of psychotic features[8] or of "mood-congruent depressive preoccupations or delusions"[11] in the index episode was significantly associated with the risk for suicide. We did not confirm the higher mortality rate reported in patients with psychotic depression by Vythilingam et al.,[31] but the duration of our observation period may have been too short to replicate that finding.

Patients with mood-incongruent delusions did not differ significantly from those with mood-congruent delusions only on any demographic, historical, or index episode variable, or with respect to outcome measures. This finding is in line with other reports[6,7,12] and does not support the DSM-IV assumption that mood-incongruent psychotic features in major depressive disorder are associated with a poorer prognosis.

Almost 10% of our patients with mood-incongruent delusions fulfilled the DSM-IV criteria for schizoaffective disorder during the prospective observation period. This suggests that there may be some overlap between major depression with mood-incongruent psychotic features and schizoaffective disorder, depressive type.

In conclusion, the empirical evidence provided by this study supports the usefulness of the "psychotic" specifier in the diagnosis of major depressive disorder, since the presence of delusions in a major depressive episode was found to have significant therapeutic and short-term prognostic implications. However, the study indicates that the boundary between delusions and nondelusional sustained preoccupations in major depressive disorder may be somewhat fuzzy, and that some of the DSM-IV assumptions concerning psychotic depression (i.e., that this depression is always "severe"; that in an individual patient, delusions will be either all congruent or all incongruent with depressed mood; and that mood-incongruent delusions are associated with a poorer prognosis) may not be warranted.

Our findings suggest that the new edition of the DSM should be more explicit in clarifying what a delusion is in a major depressive episode, with several clinical examples that can guide the clinician and the researcher. It may be useful to specify that a belief should be classified as delusional only if consistently maintained with "delusional intensity" throughout the depressive episode before treatment is started. More detailed criteria and clinical examples should also be provided for the evaluation of the mood congruence of delusions (especially of delusions of persecution) in depressed patients. It should be allowed to record mood-congruent and mood-incongruent psychotic features at the same time in an individual patient. Distinct specifiers should be provided for "severity" and "psychosis."

A clearer and more detailed phenomenological characterization of delusions in major depressive disorder is likely to increase their utility in predicting outcome and treatment response.

REFERENCES

1. Coryell W, Pfohl B, Zimmerman M. The clinical and neuroendocrine features of psychotic depression. J Nerv Ment Dis 1984;172:521–528
2. Johnson J, Horwath E, Weissman MM. The validity of major depression with psychotic features based on a community study. Arch Gen Psychiatry 1991;48:1075–1081
3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association; 1994
4. Ohayon MM, Schatzberg AF. Prevalence of depressive episodes with psychotic features in the general population. Am J Psychiatry 2002;159:1855–1861
5. Black DW, Nasrallah A. Hallucinations and delusions in 1,715 patients with unipolar and bipolar affective disorders. Psychopathology 1989;22:28–34
6. Burch EA Jr, Anton RF, Carson WH. Mood congruent and incongruent psychotic depressions: are they the same? J Affect Disord 1994;31:275–280
7. Fennig S, Bromet EJ, Tanenberg Karant M, et al. Mood-congruent versus mood-incongruent psychotic symptoms in first-admission patients with affective disorder. J Affect Disord 1996;37:23–29
8. Roose SP, Glassman AH, Walsh T, et al. Depression, delusions, and suicide. Am J Psychiatry 1983;140:1159–1162
9. Black DW, Winokur G, Nasrallah A. Effect of psychosis on suicide risk in 1,593 patients with unipolar and bipolar affective disorders. Am J Psychiatry 1988;145:849–852
10. Wolfersdorf M, Keller F, Steiner B, et al. Delusional depression and suicide. Acta Psychiatr Scand 1987;76:359–363
11. Schneider B, Philipp M, Müller MJ. Psychopathological predictors of suicide in patients with major depression during a 5-year follow-up. Eur Psychiatry 2001;16:283–288
12. Brockington IF, Helzer JE, Hillier VF, et al. Definitions of depression: concordance and prediction of outcome. Am J Psychiatry 1982;139:1022–1027
13. Coryell W, Tsuang MT. Primary unipolar depression and the prognostic importance of delusions. Arch Gen Psychiatry 1982;39:1181–1184
14. Coryell W, Tsuang MT. Major depression with mood-congruent or mood-incongruent psychotic features: outcome after 40 years. Am J Psychiatry 1985;142:479–482

15. Maj M, Pirozzi R, Di Caprio EL. Major depression with mood-congruent psychotic features: a distinct diagnostic entity or a more severe subtype of depression? Acta Psychiatr Scand 1990;82:439–444
16. Jäger M, Bottlender R, Strauss A, et al. Fifteen-year follow-up of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition depressive disorders: the prognostic significance of psychotic features. Compr Psychiatry 2005;46:322–327
17. Schatzberg A. Psychotic major depression. Presented at the DSM Research Planning Conference on Deconstructing Psychosis; February 15–17, 2006; Arlington, Va
18. Maj M. Psychotic major depression: discussion. Presented at the DSM Research Planning Conference on Deconstructing Psychosis; February 15–17, 2006; Arlington, Va
19. Endicott J, Spitzer RL. A diagnostic interview: the Schedule for Affective Disorders and Schizophrenia. Arch Gen Psychiatry 1978;35:837–844
20. Spitzer RL, Endicott J, Robins E. Research Diagnostic Criteria (RDC) for a Selected Group of Functional Disorders. 2nd ed. New York, NY: Biometrics Research, New York State Psychiatric Institute; 1975
21. Maj M, Veltro F, Pirozzi R, et al. Pattern of recurrence of illness after recovery from an episode of major depression: a prospective study. Am J Psychiatry 1992;149:795–800
22. Asberg M, Montgomery SA, Perris C, et al. A comprehensive psychopathological rating scale. Acta Psychiatr Scand Suppl 1978;271:5–27
23. Endicott J, Andreasen NC, Spitzer RL. Family History Research Diagnostic Criteria. New York, NY: Biometrics Research, New York State Psychiatric Institute; 1975
24. Spitzer RL, Endicott J. Schedule for Affective Disorders and Schizophrenia–Change Version, Third Edition. New York, NY: Biometrics Research, New York State Psychiatric Institute; 1978
25. Strauss JS, Carpenter WT. The prediction of outcome in schizophrenia. Arch Gen Psychiatry 1972;27:739–746
26. Maj M, Pirozzi R, Magliano L, et al. Long-term outcome of lithium prophylaxis in bipolar disorder: a 5-year prospective study of 402 patients at a lithium clinic. Am J Psychiatry 1998;155:30–35
27. Brown RP. Delusional depression. In: Mann JJ, ed. Phenomenology of Depressive Illness. New York, NY: Human Sciences Press; 1988: 158–175
28. Weissman MM, Prusoff BA, Merikangas KR. Is delusional depression related to bipolar disorder? Am J Psychiatry 1984;141:892–893
29. Akiskal HS, Walker P, Puzantian VR, et al. Bipolar outcome in the course of depressive illness: phenomenologic, familial, and pharmacologic predictors. J Affect Disord 1983;5:115–128
30. Charney DS, Nelson JC. Delusional and nondelusional unipolar depression: further evidence for distinct subtypes. Am J Psychiatry 1981;138: 328–333
31. Vythilingam M, Chen J, Bremner JD, et al. Psychotic depression and mortality. Am J Psychiatry 2003;160:574–576