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Suicidality in bipolar compared to unipolar depressed inpatients

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Abstract The aim of the present analyses was to evaluate differences in suicidality (past suicide attempts, suicidal thoughts at time of admission and completed suicides during the hospital stay) between bipolar and unipolar depressed inpatients. Apart from a higher frequency of past suicide attempts in bipolar depressed patients (26.6 % in bipolar vs. 17.8 % in unipolar patients), findings do not indicate any further differences in suicidality (suicidal thoughts (about 40 % in both groups) and completed suicides during the hospital stay (0.8 % in both groups)) between bipolar and unipolar patients. Factors with a predictive value for suicidal thoughts at the time of admission were a positive family history for affective disorders, past suicide attempts, and the depressive and paranoid hallucinatory syndrome (all associated with an increased risk). Female gender, an older age at hospitalisation and a longer duration of the illness were found to be associated with a lower probability for having suicidal tendencies at the time of admission. The risk for committing suicide during the hospital stay was increased if the patients had a history of past suicide attempts and suicidal thoughts at the time of admission. A more pronounced depressive syndrome at time of admission was slightly associated with a lower risk of committing suicide.

Key words Unipolar · Bipolar · Depression · Suicidality · Suicide

Introduction

Suicide is one of the leading causes of death among adults in the general population. There is a well-established relationship between suicide and mood disorders, and it has been estimated that 50–80 % of completed suicides are associated with mood disorders. The lifetime suicide risk for patients with primary affective illness or major depression is about 15 % (Pitts and Winokur 1964). More recently, research has focused on differences in suicidality of unipolar and bipolar depressed patients. However, the few studies which evaluated these differences came to conflicting findings (Lester 1993). In a record-linkage, follow-up study on about 2000 patients with affective disorder, Black et al. (1988) found a lower suicide rate for bipolar patients compared to unipolar patients. This result was generally supported by two long-term, follow-up studies of former inpatients (Angst et al. 1979; McGlashan 1984), a follow-up study of 500 outpatients (Martin et al. 1985), and a case-control study (Winokur and Black 1987). Contrarily, two other studies reported a higher suicide risk for bipolar than for unipolar patients (Dunner et al. 1976; Morrison 1982). Four other studies reported similar risks in unipolar and bipolar affective disorders (Fawcett et al. 1987; Tsuang 1978; Perris and d'Elia 1966; Weeke and Vaeth 1986).

In the context of recently published treatment guidelines for bipolar depressed patients, which propagate a rather restrictive use of antidepressants in this population, the discussion about the frequency of suicidal tendencies in bipolar patients becomes especially relevant. The major reason for the propagated restriction of antidepressants in the treatment of bipolar depressed patients is seen in their potency to trigger switches into mania or the rapid-cycling phenomena. As suggested by Moeller and Grunze (2000) it may be that these adverse reactions during treatment with antidepressants are overestimated with regard to the increased risk of committing suicide in depressed patients who do not receive a sufficiently effective antidepressive treatment.

On this background, the aim of the present study was to further evaluate suicidality in terms of past suicide attempts, suicidal thoughts at the time of admission and completed suicides during the hospital stay in bipolar depressed inpatients, and to compare these findings with those in unipolar depressed inpatients.

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Methods

The Psychiatric Hospital of the University of Munich provides 200 beds and is strongly involved in the routine inpatient care for depressive patients in Munich and its surroundings. The study is based on prospectively assessed psychopathological data of inpatients with an ICD–9 diagnosis of a unipolar or bipolar depression (ICD–9 = 296.1 or 296.3). Psychopathological data were prospectively assessed in a standardised manner by using the AMDP system. The rating was evaluated on the first day of the admission and on the last day of the hospital stay. All assessments were performed by well-experienced resident psychiatrists. Psychopathological rater trainings were regularly performed to establish a high interrater reliability. The AMDP was developed in Europe by the Association for Methodology and Documentation in Psychiatry (AMDP) to standardise the documentation of psychiatric files. It is a comprehensive rating instrument which is based on traditional descriptive psychopathology and covers the whole range of psychopathological manifestations of functional psychoses (Bobon 1983; Schonell 1988). Each item of the AMDP can be graduated on a four-point (0–3) scale. Pietzcker et al. (1983) extracted several psychopathological syndromes by using the principal component analysis of AMDP ratings.

For this study the depressive and paranoid-hallucinatory syndrome of the AMDP were considered (14). The *depressive syndrome* includes the items depressed mood, hopelessness, inhibition of drive, rumination, feeling of loss of feeling, loss of vitality, feelings of insufficiency, feelings of guilt, worse mood in the morning, interrupted sleep, shortened sleep, early wakening and decreased appetite. Items of the *paranoid-hallucinatory syndrome* are delusional mood, delusional perception, sudden delusional ideas, delusional ideas, systematised delusions, delusional dynamics, delusions of reference, delusions of persecution, verbal hallucinations, bodily hallucinations, depersonalisation, thought withdrawal and other feelings of alien influence. The total scores of all syndromes were calculated at the time of admission and discharge.

Suicidal thoughts were part of the standardised assessment using the AMDP system and were graduated as "0" = no suicidal thoughts; "1" = minimal suicidal thoughts; "2" = moderate suicidal thoughts and "3" = severe suicidal thoughts. Information about the sociodemographical data (age, gender, etc.), first onset of the illness, family history of psychiatric disorder and past history of suicide attempts were derived from the computerised documentation system of our hospital. The documentation of these data is operationalised. For example, family history of psychiatric disorder is documented as "the same psychiatric disorder is existent in the patient's family = 1", "other psychiatric disorders are existent in the patient's family = 2", "psychiatric disorders are existent in the patient's family, but the specific nature is unknown = 3", "there are different kinds of psychiatric disorders in the patient's family = 4" and "a history of a psychiatric disorder is not known in the patient's family = 5".

Statistical analyses were carried out using the SPSS 7.5 Software for Windows. Group differences for psychopathological data and age were compared by using the t-test. Group differences on all categorical variables were evaluated using the chi-square statistics. A p-value of < 0.05 (2-tailed) was considered as statistically significant. All assessed variables were entered into a logistic regression model. The odds ratio (OR) and its 95 % confidence interval (CI) were calculated for each factor in the presence of the other.

Results

In total, 3663 episodes of unipolar and 839 episodes of bipolar depressed inpatients were included in the analyses. The patient's characteristics at the time of admission are summarised in Table 1. Although bipolar depressed patients were significantly younger than unipolar depressed patients, they had a longer duration of illness since their first affective episode and had a greater number of hospitalisations. The percentage of females was slightly but significantly higher in the group of bipolar depressed patients. Furthermore, bipolar depressed patients had more siblings with a history of affective disorders than unipolar depressed patients.

The comparison of psychopathological syndromes (depressive and paranoid-hallucinatory syndrome) between both groups of patients revealed a somewhat more pronounced depressive syndrome in unipolar depressed inpatients, but no significant differences in the paranoid-hallucinatory syndrome.

The percentage of patients with a history of suicide attempts was significantly higher in bipolar depressed patients compared to unipolar depressed patients (26.6 % vs. 17.8 %). Suicidal thoughts were observed in about 40 % of both groups of patients at time of admission, and did not differ significantly between both groups. Seven bipolar de-

Table 1 Comparison of different illness-related parameters between unipolar and bipolar depressed patients

	Unipolar depressed patients	Bipolar depressed patients	Significance
N	3663	839	
Age (years)	55.30 ± 15.13	50.30 ± 15.72	< 0.001
Gender (% female)	25.8	30.2	0.013
Duration of illness since first episode (years, mean ± SD)	10.74 ± 11.43	14.17 ± 11.73	< 0.001
Number of hospitalisations (n)	2.85 ± 2.92	4.77 ± 4.51	< 0.001
Family history for affective disorders (%)	17.6	22.9	0.001
Depressive syndrome at admission (mean ± SD)	15.75 ± 6.88	14.89 ± 7.36	0.001
Paranoid-hallucinatory syndrome at admission (mean ± SD)	0.95 ± 2.18	0.79 ± 2.04	n. s.
Suicidal thoughts at admission (%)			
Mild	21.4	20.0	n. s.
Middle	12.1	13.7	n. s.
Severe	4.5	5.2	n. s.
Total	38.0	39.0	n. s.
Past history of suicide attempts (%)	17.8	26.6	< 0.001
Completed suicides during hospital stay (% of the total)	0.8	0.8	n. s.

pressed patients (0.8 % of the total) and 30 unipolar depressed patients (0.8 % of the total) committed suicide during their hospital stay (Table 1).

In order to analyse the impact of the assessed variables on the presence of suicidal thoughts at the time of admission, all variables were entered simultaneously in a multiple logistic regression model. The results are presented in Table 2. The model yielded a sensitivity of 61.1 %, a specificity of 69.4 %, and a positive predictive value of 67.3 %. The probability of having suicidal thoughts was significantly increased in patients who had a positive family history for affective disorders (OR = 1.27), past suicide attempts (OR = 2.52), and a more pronounced depressive or paranoid-hallucinatory syndrome (OR (depressive syndrome) = 1.01; OR (paranoid-hallucinatory syndrome) = 1.13). Factors which were significantly associated with a lower probability for having suicidal thoughts were female gender (OR = 0.85), an older age (OR = 0.98) and a longer duration of the illness (OR = 0.99). The differential diagnosis (unipolar vs. bipolar depression) and the number of previous hospitalisations were shown to have no significant influence on suicidal tendencies at time of admission.

A further logistic regression was performed to analyse the impact of the variables mentioned above on completed suicides during the hospital stay. This analysis revealed that only past suicide attempts had a positive predictive value for an increased risk of committing suicide during the hospital stay (p = 0.001; OR = 4.60, 95 % CI = 2.17–9.75). When this logistic regression analyses was also performed under consideration of the impact of suicidal thoughts at admission on completed suicides during the hospitalisation, we found that past suicide attempts, present suicidal ideation and the depressive syndrome were predictive for completed suicides. Past suicide attempts significantly increased the risk for committing suicide during the hospitalisation (p = 0.008; OR = 2.78, 95 % CI = 1.31–5.91). The same was true for the presence of suicidal ideation at the time of admission (p < 0.001; OR = 19.51, 95 % CI = 5.67–67.18). A more pronounced depressive syndrome at the time of admission was slightly associated with a lower risk for committing suicide (p = 0.008; OR = 0.92, 95 % CI = 0.87–0.98).

Discussion

Apart from a higher frequency of past suicide attempts in bipolar depressed patients, the present analyses of a large number of depressed inpatients revealed no further differences in suicidality (suicidal thoughts and completed suicides during the hospital stay) between unipolar and bipolar depressed patients. With regard to the rate of completed suicides, findings of the present study are in line with studies which revealed a comparable rate of suicidality in unipolar and bipolar depressed patients (Fawcett et al. 1987; Goldney et al. 1985; Tsuang 1978; Perris and d'Elia 1966; Weeke and Vaeth 1986). However, taking into account that some previous studies also indicated that the risk for committing suicide is especially high after discharge from hospital (Fawcett et al. 1987; Roy 1993), and considering that the present study only looked at the rate of completed suicides during the patient's hospital stay, our findings must not necessarily be in conflict with studies which have found lower rates of suicides in bipolar depressed patients (Angst et al. 1979; Black et al. 1988; Harris and Barraclough 1997; Martin et al. 1985; McGlashan 1984; Winokur and Black 1987).

Concerning the differences in rates of suicide attempts between both diagnostic subgroups, the results reported in the literature are as controversial as those concerning com-

Table 2 Impact of different variables on the presence of suicidal tendencies at time of admission

Factor	Coefficient	SE	P	OR	95 % CI
Gender (1 = male, 2 = female)	–0.16	0.08	0.03	0.85	0.73–0.99
Age (years)	–0.02	0.00	< 0.001	0.98	0.98–0.98
Duration of illness since first episode (years)	–0.01	0.00	0.01	0.99	0.98–0.99
Hospital stays (number)	–0.00	0.01	n. s.	0.99	0.97–1.02
FH (0 = no, 1 = yes)	0.24	0.09	0.01	1.27	1.07–1.50
PSA (0 = no, 1 = yes)	0.92	0.09	< 0.001	2.52	2.12–2.99
DS (mean)	0.09	0.01	< 0.001	1.09	1.08–1.10
PHS (mean)	0.12	0.02	< 0.001	1.13	1.09–1.16
Diagnosis (1 = unipolar, 2 = bipolar)	–0.05	0.09	n. s.	0.95	0.80–1.14
Constant	–0.63	0.23	0.01		

SE Standard error, *P* Two-tailed P values, *OR* odds ratio, *CI* Confidence interval, *FH* family history of affective disorders, *PSA* past history of suicide attempts, *DS* depressive syndrome, *PHS* paranoid-hallucinatory syndrome

pleted suicides. On the basis of a meta-analysis concerning suicidal behaviour in bipolar and unipolar affective disorders Lester (1993) reported that five of eight studies found a higher incidence of past suicide attempts in bipolar and three in unipolar depressed patients. The results of the present study revealed that past suicide attempts were more frequent in bipolar than in unipolar depressed patients. The rate of about 27 % past suicide attempts in our sample of bipolar depressed patients is in line with the lifetime risk of 25 % to 50 % for suicide attempts in bipolar disorders, which was reported by Goodwin and Jamison (1990).

Taken together, the question whether the rate of completed suicides or suicide attempts differs between unipolar and bipolar depressive patients cannot be conclusively answered, because the empirical database on this topic needs further expansion. Furthermore, the comparison of the present findings with those from other studies is clearly limited due to differences in methods and designs. One important point in this context is that many previous studies dealing with suicidality have not distinguished between bipolar and unipolar depressed patients. Furthermore, differences in the duration of follow-up, sampling biases – e. g. inpatients versus outpatients, proportion of manic index episodes compared to depressive index episodes – confound the results concerning the rate of suicidality in patients with affective disorders. A further methodological problem is that various studies addressed different dimensions of suicidality (e. g. suicide attempts, suicidal thoughts, completed suicides) or did not clearly differentiate between these dimensions.

Apart from the question about differences between unipolar and bipolar depressed patients with respect to completed suicides and suicide attempts, the present study also addressed the question about the prediction of suicidal behaviour. The factor which was found to have the strongest predictive value of suicidal thoughts at the time of admission as well as on completed suicides during the hospital stay was a positive history of past suicide attempts. This finding is consistent with previous findings in the literature (Krupinski et al. 1998; Nordström et al. 1995; Tuckman and Youngman 1963). After including the factor "suicidal thoughts at time of admission" into the analysis to predict completed suicides during the hospital stay, this factor was found to be the strongest, followed by past suicide attempts and a more pronounced depressive syndrome at the time of admission, whereby depression was only slightly associated with a lower risk for committing suicide during the hospital stay. The latter finding seems surprisingly, but could be explained by the clinical observation that patients with a very severe depression are unable to carry out any relatively complex goal-directed activity. Furthermore, patients with intense depressive symptoms and suicidal thoughts may be under closer observation and control of the therapeutic team to prevent suicidal events.

Although the present study could not solve the controversy about differences in suicidality between bipolar and unipolar depressed patients, it indicates, like other studies, that the rate of suicidal behaviour in both groups of patients is substantial. Therefore, the recognition and treatment of suicidality is an important clinical task in unipolar as well as bipolar depressed patients.

Treatment with antidepressants has been shown to be equally effective in bipolar and unipolar depressed inpatients, and to reduce suicidality in a similar time course as depressive symptoms (Isacsson et al. 1999; Möller et al. in press). The data presented here suggest that patients with a history of suicide attempts and suicidal thoughts at the time of admission are at a high risk of committing suicide during the hospital stay and should therefore receive an effective antidepressive treatment, possibly without differentiating the severity of depression. Antidepressants with a predominantly serotonergic mechanism of action may be of particular benefit in patients with suicidal problems, which is in line with neurobiological theories about suicidal behaviour. Together with the lower toxicity of SSRIs when taken in an overdose, as well their lower potency for triggering switches into mania or rapid cycling phenomena compared with TCAs makes them an attractive choice for treatment of depressed patients who are at risk for suicide. The recently proposed guidelines for using mood stabilisers as the first line of treatment for acute bipolar depression, although their antidepressive efficacy is not proven and, apart from lithium, not much is known about the effect of these drugs on suicidal behaviour, needs to be critically discussed in the context of suicidality.

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