Original article

What are depressive symptoms in acutely ill patients with schizophrenia spectrum disorder?

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A R T I C L E   I N F O

A B S T R A C T

Background: Aim was to examine depressive symptoms in acutely ill schizophrenia patients on a single symptom basis and to evaluate their relationship with positive, negative and general psychopathological symptoms.

Methods: Two hundred and seventy-eight patients suffering from a schizophrenia spectrum disorder were analysed within a naturalistic study by the German Research Network on Schizophrenia. Using the Calgary Depression Scale for Schizophrenia (CDSS) depressive symptoms were examined and the Positive and Negative Syndrome Scale (PANSS) was applied to assess positive, negative and general symptoms. Correlation and factor analyses were calculated to detect the underlying structure and relationship of the patient's symptoms.

Results: The most prevalent depressive symptoms identified were depressed mood (80%), observed depression (62%) and hopelessness (54%). Thirty-nine percent of the patients suffered from depressive symptoms when applying the recommended cut-off of a CDSS total score of > 6 points at admission. Negligible correlations were found between depressive and positive symptoms as well as most PANSS negative and global symptoms despite items on depression, guilt and social withdrawal. The factor analysis revealed that the factor loading with the PANSS negative items accounted for most of the data variance followed by a factor with positive symptoms and three depression-associated factors.

Limitations: The naturalistic study design does not allow a sufficient control of study results for the effect of different pharmacological treatments possibly influencing the appearance of depressive symptoms.

Conclusion: Results suggest that depressive symptoms measured with the CDSS are a discrete symptom domain with only partial overlap with positive or negative symptoms.

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1. Introduction

Depressive symptoms have been reported in schizophrenia patients since the earliest clinical characterizations of the illness and are thought to be highly prevalent representing an important

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and distinct symptom domain [9]. Depressive symptoms are associated with impairments in social and vocational functioning, poor quality of life and an increased risk of relapse [32,40] also contributing to the alarmingly high rates of suicide [28]. In patients admitted for the first time due to the exacerbation of their psychosis depressive mood as well as loss of self-confidence, feelings of guilt and suicidal thoughts are among the most prevalent symptoms [6].

However, despite the vast research on depression in schizophrenia patients studies explicitly examining depressive symptoms and their association with other psychopathological symptoms in schizophrenia patients have only rarely been performed so far. Most study reports focus on the assessment of mean scores of depression rating scales often comparing depressed and non-depressed patients yet without going into detail what specific symptoms these so called "depressive" symptoms really are [11,18]. In addition, previous studies vary considerably in terms of the methodology of assessment, the observed interval or the patient status [37] limiting the generalizability of the results. The evaluation and diagnosis of depression in schizophrenia patients is furthermore complicated by the fact that some depressive symptoms such as sleep disturbances, concentration difficulties or attentional deficits overlap with negative symptoms making it hard to differentiate between these symptom domains [14]. On the other side, some authors found depressive symptoms to be more closely linked to positive than to negative symptoms questioning if the occurrence of depressive symptoms might be a result of living with persistent, severe psychosis [30,34].

Therefore, today the relationship between single depressive symptoms and positive or negative symptoms is still unclear even though a more profound understanding of how these symptoms are interrelated might lead to a better nosologic description of schizophrenia and with it to the development of standardized treatment regimens of the depressive syndrome in schizophrenia [34]. For this reason, aim of this study was to contribute to the understanding of the role and value of depressive symptoms in schizophrenia by evaluating single depressive symptoms in acutely ill schizophrenia patients and their association with positive and negative symptoms within a naturalistic study.

2. Methods

2.1. Subjects

Data were collected in a multicenter follow-up programme (German Research Network on Schizophrenia) [43] at eleven psychiatric university hospitals and three psychiatric district hospitals in the region surrounding Munich between January 2001 and December 2004. Patients aged between 18 and 65 years and diagnosed according to DSM-IV criteria with schizophrenia, schizophreniform disorder, delusional disorder and schizoaffective disorder were eligible for inclusion. Exclusion criteria were: head injury, severe medical illness such as a malignant disease, alcohol dependency and drug dependency. An informed written consent had to be provided to participate in the study. The study protocol was approved by the local ethics committees [17].

2.2. Assessments

DSM-IV diagnoses were established by clinical researchers on the basis of the German version of the Structured Clinical Interview for DSM-IV [5]. Depressive symptoms were examined applying the Calgary Depression Scale for Schizophrenia [1]. The CDSS is a 9-item clinician questionnaire (depression, hopelessness, self-depreciation, guilty ideas of reference, pathological guilt, morning depression, early wakening, suicide, observed depression) with a

range of the global score of 0–27 points. The CDSS was chosen because it was explicitly developed to examine depressive symptoms in patients with schizophrenia and is not confounded by positive or negative symptoms of schizophrenia psychopathology [4]. A satisfying reliability of the CDSS (Cronbach's α .79) and a concordant validity with the Hamilton Depression Rating Scale (.82) and Beck Depression Inventory II (.79) have been reported [2]. To assess symptom severity the clinician rating scale Positive and Negative Syndrome Scale for Schizophrenia (PANSS) [19] was used. All raters had been trained using the applied scales and ratings were performed within the first three days after and biweekly during admission as well as at discharge. Intra-class correlations were calculated based on the PANSS (ANOVA-ICC > 0.8) showing a high inter-rater reliability.

2.3. Patients

In the entire multicenter study 474 patients were enrolled. Forty-six patients had to drop out for different reasons with another 28 patients excluded due to incomplete admission ratings and 122 patients due to missing CDSS values. Patients excluded form this analysis did not significantly differ from the patients included in terms of gender ($P = 0.1984$), age (=0.0626), diagnosis ($P = 0.073$) as well as baseline psychopathology (PANSS total score $P = 0$).

Therefore, the sample available for analysis comprised 278 (163 male, 115 female) subjects. The mean age was 34.77 years (± 11.07) and the mean duration of illness 7.68 years (± 9.14). 84% of the patients were diagnosed with schizophrenia, 12% with a schizoaffective disorder and 4% with a brief psychotic disorder and in 11 patients a comorbid depressive episode was diagnosed. The mean number of hospitalisations was 3.94 (± 5.68). The duration of current hospitalisation was 68.78 days (± 49.65) and the mean age at first treatment 27.03 years (± 8.82). Patients were treated under naturalistic conditions (multiple answers possible): 51% of the patients received first-generation antipsychotic, 79% of patients second-generation antipsychotic treatment and 41% of the patients were treated with first – as well as second – generation antipsychotics. Tranquilizers were administered in 66% of patients and mood stabilizers in 12%. Thirty-three percent of the patients were also treated with antidepressants.

2.4. Statistical analysis

A stepwise approach was conducted to examine depressive symptoms in patients suffering from schizophrenia spectrum disorder. In a first step, depressive symptoms were evaluated and described regarding their severity and frequency in acutely ill patients at the time-point of admission. In a second step, in order to examine the presence of depressive symptoms in relation to the patients' further psychopathological symptoms, depressive symptoms were compared to positive, negative and general psychopathological symptoms using univariate Wilcoxon-tests. In a third step, to evaluate the correlation between depressive symptoms and the patients' positive, negative and general psychopathological symptoms correlation analyses were calculated using polychoric correlation. With this technique the correlation between two ordinal-scaled variables is expressed by the correlation of the corresponding latent interval-scaled variables. It is recommended if ordinal variables have less than 7 levels [8]. And in a forth step, factor analysis using principal axis method was computed in order to identify latent structures underlying the data and to identify potential overlap between the different psychopathological symptoms. Parallel plots were used in order to determine a reasonable number of factors. This technique compares the eigenvalues of the original data with the eigenvalues of its random