Defining and predicting functional outcome in schizophrenia and schizophrenia spectrum disorders

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ABSTRACT

Background: To assess criteria and to identify predictive factors for functional outcome. The criteria should cover all domains proposed by the Remission in Schizophrenia Working Group.
Method: PANSS ratings were used to evaluate the symptomatic treatment outcome of 262 inpatients with schizophrenia spectrum disorders within a naturalistic multicenter trial. Functional remission was defined as a GAF score >61 (Global Assessment of Functioning Scale), SOFAS score >61 (Social and Occupational Functioning Scale) and a SF-36 mental health subscore >40 (Medical Outcomes Study—Short Form Health Survey). Multivariate logistic regression and CART analyses were used to determine valid clinical and sociodemographic predictors.
Results: In total, 52 patients (20%) fulfilled the criteria for functional remission, 125 patients (48%) achieved symptomatic resolution and when criteria for functional remission and symptomatic resolution were combined 33 patients (13%) achieved complete remission. Younger age, employment, a shorter duration of illness, a shorter length of current episode, less suicidality, and a lower PANSS negative and global subscore at admission were predictive of functional remission. The regression model showed a predictive value of more than 80%.
Conclusions: A significant association was found between functional remission and symptomatic resolution, indicating reasonable validity of the proposed definition for functional outcome. The

revealed predictors for functional treatment outcome emphasize the need for psychosocial and vocational rehabilitation in schizophrenic patients.

1. Introduction

Since their introduction in 2005 the Remission in Schizophrenia Working Group's proposed remission criteria have been studied in many cases and have been implemented in follow-up trials. Several authors found the new remission criteria to be an achievable goal for clinical trials and demonstrated strong correlations with established measures of symptom severity, cognition and quality of life (Ciudad et al., 2009; Lasser et al., 2007).

As symptom reduction often leaves persistent impairments in multiple features such as social functioning or productive activities researchers have tried to define outcome domains beyond symptomatic improvement (Nasrallah et al., 2005). When assessing community outcome in schizophrenia authors defined their outcome criteria by the Global Assessment of Functioning (GAF) Scale and the Social Adjustment Scale (SAS) II (Wittorf et al., 2008). Others examined functional outcome by solely using the GAF Scale or using "multiple domains of functional outcome" (Brekke et al., 2005; Hofer et al., 2006). Regarding influencing variables for functional outcome the importance of premorbid adjustment, occupational functioning as well as the presence of negative symptoms was demonstrated (Haro et al., 2008; Lindstrom, 1996).

However, one of the obstacles in assessing and evaluating functional outcome is an almost complete lack of consensus on the appropriate terminology and standards applied to index the patient's individual level of functioning. Discussing the concept of functional remission Harvey and Bellack stated the challenge in finding an appropriate definition for functioning as there is not even a clear standard for fitting levels of accomplishment in these functional domains in the healthy population (Harvey and Bellack, 2009).

Notably, when proposing the consensus criteria the Remission in Schizophrenia Working Group explicitly considered the incorporation of functional indicators of remission such as quality of life or social functioning (Andreasen et al., 2005). Due to the absence of an adequate knowledge base, fitting terminology and applicable definition the expert group postponed extending the definition of treatment outcome. But the working group welcomed a subsequent development of a definition of remission including functional outcome (Andreasen et al., 2005).

Therefore, aims of this study were

(I) to find valid and reliable assessment instruments covering all of the expert group's proposed functional outcome criteria

(II) to examine what proportion of patients achieve functional and concurrently symptomatic outcome criteria and

(III) to identify clinical and sociodemographic predictive factors for functional remission.

2. Methods

2.1. Subjects

Within a multicenter follow-up programme (German Research Network on Schizophrenia) at eleven psychiatric university hospitals and three psychiatric district hospitals all patients admitted between January 2001 and December 2004 suffering from schizophrenia (paranoid, disorganized, catatonic or undifferentiated subtype), schizophreniform or schizoaffective disorder according to DSM-IV criteria were included according to in- and exclusion criteria. To prevent centrum effects and other potential factors of interference, the patients included in statistical analyses were randomly selected via a computer software. Patients were aged between 18 and 65 years. A clinical diagnosis of head injury in the history, major medical illness and alcohol or drug dependency were defined as exclusion criteria. To participate in the study, approved by the local ethics committees, an informed written consent had to be provided.

2.2. Assessments

DSM-IV diagnoses were assessed by clinical researchers on the basis of the German version of the Structured Clinical Interview for DSM-IV (American Psychiatric Association, 1994). During interviews with patients, relatives and care providers sociodemographic and course-related variables were collected using a standardized documentation system (BADO) (Cording, 1998).

Symptom severity was assessed biweekly via the Positive and Negative Syndrome Scale for Schizophrenia (PANSS) (Kay et al., 1988).

The following instruments were rated at admission and discharge on the patient's current level:

The Global Assessment of Functioning Scale (GAF) (American Psychiatric Association, 1994), which comprises from the axis V of the DSM-IV, was introduced as a measure of global severity of illness including the patient's psychological, social and occupational functioning. The SOFAS, which is an altered form of Goldman's Global Assessment of Functioning Scale Modified was furthermore applied (American Psychiatric Association, 1987). SOFAS was used for it is not directly influenced by the global severity of the subject's symptoms. The validity and reliability of this scale were verified (Patterson and Lee, 1995; Roy-Byrne et al., 1996). GAF was rated within the respective section of SCID-I and SOFAS was rated on the basis of specific criteria. Specific criteria concerning socio-occupational functioning were systematically assessed using the standardized documentation system. On the basis of these criteria the SOFAS as global impression according to DSM-IV was rated.

The quality of life measure used in this trial was the mental subscore of the Medical Outcomes Study—Short Form 36-