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Recovery from psychosis in schizophrenia and schizoaffective disorder: symptoms and neurocognitive rate-limiters for the development of social behavior skills

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Abstract

Neurocognitive deficits are believed to be important predictors of functional outcome in chronic psychotic disorders, but few supporting studies have utilized prospective designs and adequate control. The aim of this study was to estimate the relative influence of symptoms and neurocognitive deficits on the development of social behavior skills in a cohort of individuals with schizophrenia or schizoaffective disorder recovering from acute symptom exacerbations. Forty-six individuals were recruited upon discharge from an inpatient unit and completed assessments of symptoms, neurocognitive function, and social behavior at 3-month intervals for 1 year. Correlational analyses and random regression models were used to model social behavioral capacities longitudinally. Social behavior improved modestly (10% improvements in ratings) over the follow-up period for the group as a whole. Disorganized and negative symptoms, as well as neurocognitive deficits in short-term and working memory predicted changes in social behavior over time. Individuals with better working memory function showed significantly greater abilities to recover social behavior skills, whereas those with working memory deficits showed no functional improvement over time. Both symptoms and neurocognitive deficits are important determinants of functional outcome in schizophrenia. It is proposed that clinicians should consider neurocognitive thresholds for treatment response when developing rehabilitation plans.

Keywords: Schizophrenia; Schizoaffective disorder; Social functioning; Neurocognition; Symptoms; Rehabilitation; Recovery

1. Introduction

A number of new treatments for schizophrenia have been introduced and tested over the past 10 years. Novel antipsychotic medications offer clear benefits as compared to conventional agents, and psychiatric rehabilitation treatments provide the opportunity for improved social and vocational functioning. The availability of these new treatments has stimulated discussions regarding the factors that predict recovery and rehabilitation success in schizophrenia. For example, positive symptoms appear to have little influence on functional capacity, whereas negative symptoms have been associated with poor long-term functional outcome (Anthony et al., 1995; Bell and Lysaker, 1995; Bellack et al., 1990; Dickerson et al., 1999; Hoffman and Kupper, 1997; Smith et al., 1999a; Van der Does et al., 1996).

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Other research suggests that neurocognitive deficits are more predictive of treatment response and functional capacity than core symptoms of schizophrenia. Reviews of this literature by Green (1996; Green et al., 2000.) revealed that deficits in short-term memory, vigilance, and executive functioning are consistently associated with poor outcome. Memory deficits have been associated with reduced levels of elementary social skills and learning capacity (Bowen et al., 1994; Kern et al., 1992; Smith et al., 1999b; Silverstein et al., 1998a;), while deficits in attention/vigilance have been more commonly associated with poor self-care and organizational skills (Wykes, 1994; Brekke et al., 1997; Addington and Addington, 1999; Ikebuchi et al., 1999; Silverstein et al., 1998a). A number of other studies have found that executive deficits consistently predict role performance and global adjustment (Bellack et al., 1999;Breier et al., 1991; Goldberg et al., 1990; Jaeger and Douglas, 1992; Lysaker et al., 1995; Kopelowicz et al., 2000).

Many of these studies used only retrospective data analyses, however, or failed to use longitudinal assessments of positive, negative, and disorganized symptoms. Norman et al. (1999) critiqued several of these studies, noting that symptom assessments were conducted when subjects were acutely ill and then were used to predict functioning at a later point in time. Studies using more detailed symptom measures have suggested that disorganized and negative symptoms are more predictive of functional skills than neurocognitive deficits in outpatients with schizophrenia (Norman et al., 1999; Malla et al., 1999; Dickerson et al., 1996; Hoffman and Kupper, 1997). Clearly, questions remain regarding the relative influence of symptoms and neurocognitive deficits on functional outcome in schizophrenia.

Our group recently finished a prospective study of individuals with chronic psychotic disorders recovering from acute symptom exacerbations, which aimed to identify illness characteristics that predict recovery and response to rehabilitation treatments. In a previous report, we documented the differential influence of symptoms and neurocognitive deficits on aspects of social adjustment in a cross-sectional analysis (Smith et al., 1999a). Here we report data on the rate of improvement in social behavior skills in the first year following stabilization of acute psychotic symptoms.

2. Methods

2.1. Sample

Subjects were recruited from consecutive admissions to an outpatient treatment program, with inclusion criteria including: a) age 18–50; b) diagnosis of schizophrenia or schizoaffective disorder; and c) having been in the hospital for treatment of an acute psychotic exacerbation within 30 days of recruitment. Exclusion criteria included: a) comorbid diagnosis of substance dependence within past 3 months; b) estimated IQ less than 70; and c) any history of serious traumatic brain injury (defined as including either loss of consciousness or requiring overnight hospitalization).

After complete description of the study to the subjects, written informed consent was obtained. Fifty-six individuals gave consent and completed initial assessments of symptoms, neurocognition, and social adjustment. The study design included follow-up assessments with the same measures at 3-month intervals for up to 1 year. Forty-six of the 56 subjects completed at least 3 of the 5 scheduled assessments, and comprised the cohort for analyses. Ten of the subjects either left the clinic or refused participation after the first or second assessment; this group did not differ from the rest of the subjects on any of the demographic, illness, or outcome variables examined in the study. All subjects received standard ambulatory treatment including monthly visits with a psychiatrist for medical management and a care coordinator for case management/psychotherapy as needed on an individual basis. Each subject also had a rehabilitation counselor who supervised a program of symptom management and pre-vocational skills training. No efforts were made to control for specific medication or non-medication treatments. Three subjects experienced symptom exacerbations that required hospitalization and medication adjustment during their follow-up period. These hospitalizations were brief and did not interfere with participation in the project. Ten subjects (22%) were maintained on conventional antipsychotic medications throughout the study period, 16 (35%) were taking an atypical agent (either risperidone or olanzapine), and 20 (43%) were taking clozapine.

The Structured Clinical Interview for DSM-IV (First et al., 1995) was administered to establish the primary