Predictive value of thought disorder in new-onset psychosis

James Wilcox a,⁎, George Winokur b,1, Ming Tsuang c

aUniversity of Arizona, AZ, USA
bUniversity of Iowa, IA, USA
cUniversity of California at San Diego, CA, USA

Abstract

Objective: This research addresses the relationship of formal thought disorder in the early stages of psychotic illness to the long-term outcome of mental health many years later. The specific topic of concern was to evaluate the prognostic significance of thought disorder on the severity of psychosis over time.

Methods: Subjects with new-onset psychosis were evaluated on a variety of measures including education, physical health, Brief Psychiatric Rating Scale scores. They were also given the Thought, Language, and Communication Scale to evaluate thought disorder. Subjects were interviewed again at 10 and 20 years to evaluate variations in outcome. Appropriate statistical methods were used to evaluate changes in the level of functioning over time.

Results: Thought disorder was not unique to schizophrenia. Bipolar patients presented with significant positive thought disorder at the onset of psychosis. Overtime positive thought disorder gradually improved in most patients. Negative thought disorder was more persistent, especially in subjects with schizophrenia. Initial psychosis with thought disorder characterized by poverty of content seemed to be associated with poor long-term outcome.

Conclusion: Formal thought disorder can predict outcome in some cases of psychosis. Not all types of thought disorder have the same prognostic implication. Positive forms of thought disorder (pressured speech, tangentiality) had no significant predictive value. Negative thought disorder (particularly poverty of speech and poverty of content) tend to predict a chronic, more unrelenting course of illness.

1. Introduction

The prediction of outcome for severe forms of mental illness has been a topic of interest since the early days of psychiatry. The progression from early psychiatric symptoms to chronic conditions remains a clinical mystery. Indeed, the causes of severe and persistent mental illness are still poorly understood beyond the theoretical stages [1]. Although risk factors such as genetic diathesis and substance abuse give global information about disease, few actual symptoms have been investigated rigorously over time [1–4]. This is of concern in a discipline where diagnostic impressions are largely made by assessing behavioral changes. It is, therefore, of considerable importance to gather such information about the prognostic value of symptoms and conditions that present in the initial stages of illness, whenever possible.

Early observations of prognostic signs for psychotic illness have been noted by the literature for nearly a century [5,6]. In the past few years, there has been renewed interest in the study of psychosis among young adults. Researchers search for variables that may predict the persistence of disability among prodromal cases and various forms of schizotypy [6–9]. Psychiatric epidemiology has been very useful in the evaluation of early symptoms and prognosis [1–4,10]. This methodology is increasingly relevant to assess risk factors in the prodroma [1,7,8]. Risk factors that predict conversion of first-episode psychosis into schizophrenia include high levels of genetic loading, drug abuse, low levels of education, and low socioeconomic status [1,10–14]. A growing body of evidence suggests a link between thought disorder, biological diatheses, and other known prognostic factors occurring during early psychosis [15–18].

⁎ Corresponding author. Tel.: +1 520 792 1450x6037.
E-mail address: James.Wilcox2@VA.GOV (J. Wilcox).
1 Deceased.
Since the early work of Bleuler [19], Kraepelin [5,6], and Moukas et al [7], thought disorder has been considered a major symptom of psychosis. Andreasen and Grove [20,21] have found that formal thought disorder has predictive value in psychiatric diagnoses over several months. They have found that negative thought disorder seems to predict the short-term outcome of schizophrenia over several months. Patients with a poverty of speech and poverty of content were more likely to have a form of schizophrenia, whereas positive forms of thought disorder were more common among the affective psychoses [5,6,13,14,21]. Several inventories to evaluate thought disorder presently exist [20-23]. These inventories appear valid and reliable and have been used in a variety of studies [20-23]. General syndrome validity and prognostic prediction [13-15].

The field of epidemiology has been very useful in areas of psychiatric epidemiology [12-15,20-24]. Indeed, the inventory instruments have been suitable for replication and evaluation over time and have proven to be useful tools in the area of psychiatric epidemiology [12-15,20-24]. The field of epidemiology has been very useful in areas of validity and prognostic prediction [13-15].

This study was designed to look for prognostic variables in early stages of psychosis and to follow subjects over time to assess the relative value of demographic and symptomatic data several years after the first onset of symptoms. We were mainly concerned with cases of new-onset psychosis (in the first 8 months) and to see how these patients progressed over the following years. We concentrated our efforts on subjects who were psychotic, regardless of their diagnosis.

2. Methods

This study was designed to be a prospective follow-up of symptoms in cases of new-onset psychosis. Our subjects were collected from consecutive admissions to the University of Iowa Psychiatric Hospital and clinic as well as local community mental health centers. All subjects were older than 18 years at the time of their recruitment, and all met the criteria for schizophrenia, schizoaffective disorder, or manic bipolar illness. Appropriate permission was obtained from the proper ethics committee or institutional review board before the study, and all subjects gave informed consent to participate in a series of interviews. All were informed that recontact in 10 and 20 years was planned. No blood or tissue samples were obtained from any subject. This yielded a total of 188 cases: 68 with schizophrenia, 60 with schizoaffective disorder, and 60 with bipolar disorder in a manic state. These were matched for sex and age with a community sample of 200 controls who had no symptoms of psychiatric illness.

The psychiatric subjects were all considered to be “new onset cases” with less than 8 months of active symptoms. In each case, diagnoses were made by the primary investigator (J.W.) using the Research Diagnostic Criteria [24]. The second author (G.W.) made diagnostic assessments on 5% of the subjects as a control of reliability. The interrater agreement was high, with a $\kappa$ score of 0.92. Our study group has an excellent record of maintaining diagnostic rigor in terms of both validity and reliability over time as evidenced by many studies involving psychiatric epidemiology (13, 14, and 15). We did initial recruitment for 3 years from 1993 to 1996. Our rate of participation was good, with 86% of potential subjects actually agreeing to be in the study.

Each person in the study provided additional information about themselves. This included family history of psychiatric illness, occupational status, educational background, age of onset of psychiatric symptoms, and marital status. Each participant was evaluated using the Brief Psychiatric Rating Scale (BPRS) [25] and the Scale for the Assessment of Thought, Language, and Communication (TLC) [20,21]. The TLC was conducted by elucidation of responses during an unstructured 45-minute interview conducted in the manner of Andreasen [20]. We conducted the TLC on the third day of clinical care. The interviews were standardized in a nonclinical format to prevent discussion of psychopathology. Each interview began by having the subject talk about their self for as long as possible, usually 15 minutes. Ratings were done in a note form during the interviews and transferred to score sheets immediately afterward. A standardized, neutral list of topics was used to keep the interviewer as blind as possible. Discussion of symptoms was avoided. It was our intention to assess each individual at 10 and 20 years after the initial evaluation.

2.1. Statistical analysis

Statistical analysis used $\kappa$ coefficient, $\chi^2$, and/or Fisher exact test, where appropriate. Student $t$ test and Pearson correlation were used in comparisons. Statistics were done using the SPSS program (SPSS, Chicago, IL) [26,27]. Multiple regression analysis was conducted to evaluate the relative effects of each variable on the overall mean for TLC scores and BPRS scores at 10- and 20-year follow-up. All statistical tests were conducted 2 tailed using an $\alpha$ value of .05, unless otherwise noted.

3. Results

We found that at the onset of the study, subjects with schizophrenia and schizoaffective disorder had similarly high rates of thought disorder by the TLC. As expected, controls expressed little or no thought disorder. The clinical subjects presented with varied degrees of thought disorder. Initial BPRS scores demonstrated high rates of impairment in all 3 psychiatric groups at first evaluation (mean scores of 86 for subjects with schizophrenia, 81 for subjects with schizoaffective disorder, and 78 for subjects with bipolar disorder). The initial TLC total mean scores were 33 for subjects with schizophrenics, 32 for subjects with schizoaffective disorder, and 29 for subjects with bipolar disorder (Table 1).

At 10-year follow-up, we were able to contact 86% of subjects. We found that levels of thought disorder remained significantly higher in patients with schizophrenia than in all
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