Schizophrenia Research 150 (2013) 205–210

Contents lists available at ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

A five year diagnostic follow-up of 1840 patients after a first episode non-schizophrenia and non-affective psychosis

E. Björkenstam [a,b], C. Björkenstam [a,b], A. Hjern [c], J. Reutfors [d], R. Bodén [d,e,*]

[a] Department of Public Health Sciences, Division of Social Medicine, Karolinska Institutet, Stockholm, Sweden
[b] Department of Statistics, Monitoring and Evaluation, National Board of Health and Welfare, Stockholm, Sweden
[c] Centre for Health Equity Studies (CHESS), Stockholm University/Karolinska Institutet, Stockholm, Sweden
[d] Department of Medicine Solna, Clinical Epidemiology Unit, Karolinska Institutet, Stockholm, Sweden
[e] Department of Neuroscience, Psychiatry, Uppsala University, Uppsala, Sweden

ARTICLE INFO

Article history:
Received 18 February 2013
Received in revised form 14 June 2013
Accepted 3 July 2013
Available online 27 July 2013

Keywords:
Schizophrenia
Diagnostic follow-up
Psychosis
Predictors
Cohort study
Population based

ABSTRACT

Objective: It is not clear which patients with a first psychotic episode will develop schizophrenia. We performed a diagnostic follow-up of patients treated for a first time non-affective, non-schizophrenia psychosis and explored potential predictors of a subsequent schizophrenia or schizoaffective diagnosis.
Methods: This register-based cohort study comprises individuals born between 1973 and 1978 in Sweden, with a first hospital-treated psychosis excluding schizophrenia, schizoaffective disorder, bipolar disorder and depressive disorder with psychotic symptoms (n = 1840). The patients were followed for five years regarding subsequent diagnoses. Psychiatric, social, family history of psychiatric illness, premorbid intellectual level, head injuries and obstetrical complications were investigated by logistic regression as predictors of schizophrenia or schizoaffective diagnosis.
Results: During the follow-up, 18% were diagnosed with schizophrenia or schizoaffective disorder, 5% were diagnosed with bipolar disorder, whereas 29% were not re-admitted to a psychiatric clinic. Patients with a first-degree relative hospitalized for schizophrenia and/or bipolar disorder had an increased risk of subsequent diagnosis for schizophrenia or schizoaffective disorder (odds ratio 1.9 and 95% confidence interval 1.1 to 3.0)), whereas previous severe criminality was associated with a decreased risk (odds ratio 0.5, 95% confidence interval 0.3–0.8).
Conclusion: Diagnostic outcome was diverse after a first non-schizophrenia and non-affective psychosis. Family history of severe mental illness and no previous conviction for severe criminality were the strongest risk factors for a future schizophrenia or schizoaffective diagnosis.

1. Introduction

Schizophrenia is a diagnosis that is stable over time and with notorious poor prognosis (Robinson et al., 2004; Bromet et al., 2005, 2011) However, for patients with a first-episode psychosis (FEP), diagnostic shifts are relatively common during follow-up (Ramirez et al., 2010; Castro-Fornieles et al., 2011; Kim et al., 2011). Studies of the diagnostic stability in FEP have suggested that other psychosis diagnoses are less stable than schizophrenia spectrum diagnoses (Baldwin et al., 2005; Addington et al., 2006; Rahm and Cullberg, 2007). Affective psychosis and psychosis not otherwise specified have a low stability (Rahm and Cullberg, 2007; Bromet et al., 2011).

A significant proportion of patients with schizophrenia have initially been diagnosed with other psychotic disorder many years before a definite schizophrenia diagnosis has been established (Castagnini et al., 2008; Bromet et al., 2011). On the other hand, patients with certain psychosis diagnoses such as acute transient psychosis may not develop schizophrenia and about 20% are not readmitted (Castagnini et al., 2008). A number of risk factors for developing schizophrenia in a population perspective have been identified: familial factors, poor premorbid adjustment (Ramirez et al., 2010), prodromal symptoms (Moukas et al., 2010), high paternal age, longer duration of untreated psychosis, obstetrical complications (Maki et al., 2005), head injuries, and substance abuse (Maki et al., 2005). Nevertheless, there is a lack of knowledge regarding which of the patients with a first psychotic episode will develop a chronic psychotic disorder (Murphy, 2010). Available studies have suggested poor function, more negative and positive symptoms (Bromet et al., 2011), and having first-degree relatives with schizophrenia (Das et al., 1999), as predictors of a subsequent schizophrenia diagnosis after a first non-affective psychotic break, but these studies are hampered by small and selected samples with high loss to follow-up.

Predicting the course of a psychotic disorder by analyzing diagnostic shifts over time is of great importance not only to give reliable

* Corresponding author at: Department of Neuroscience, Psychiatry, Uppsala University, SE-751 85 Uppsala, Sweden.
E-mail address: robert.boden@neuro.uu.se (R. Bodén).

0920-9964/$ – see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.schres.2013.07.011

information about the clinical prognosis to both patients and their families, but also to implement adequate therapeutic and psychosocial interventions. With the aim of describing shifts of diagnoses over time, we performed a register based diagnostic follow-up of patients treated for a first episode psychosis that was neither schizophrenia nor an affective psychosis. A secondary aim was to assess potential predictors for a future diagnosis of schizophrenia or schizoaffective disorder.

2. Method

2.1. Study population

Swedish national registers make it possible to study the entire Swedish population and to perform linkage of data between different registers on an individual level. In the present study, the unique personal identity number assigned to each permanent resident in Sweden was used to link information from nine population-based registers (Ludvigsson et al., 2009).

The Medical Birth Register, established in 1973, includes information on almost all births in Sweden (Cnattingius et al., 1990). The National Patient Register includes all individuals admitted to psychiatric or general hospitals, with nearly complete coverage for psychiatric care since 1973 and for somatic care since 1987 (Ludvigsson et al., 2011). Through the Multi-Generation Register one is able to link children and parents (biological and adoptive) together. The Causes of Death Register comprises information on all deaths of Swedish residents since 1952 (National Board of Health and Welfare, 2011). The Register of Court Convictions contains information on all court convictions in Sweden for persons 15 years of age or older (National Council for Crime Prevention, 2011). We used the Swedish Register of Children and Young Persons subjected to child welfare measures to obtain records on out-of-home care foster family and residential care. The Total Enumeration Income Survey contains data on the income of and governmental benefits provided to all Swedish residents. The Total Population Register, established in 1968, includes information on age, sex, place of residence etc. (Statistics Sweden, 2009). Finally, the National School Register contains information on school grades.

The selection of the study population is illustrated in Fig. 1. We only included individuals with at least one biological parent born in Sweden and for whom we could obtain the personal identity number of the biological mother. We selected all individuals with a first hospital-treated psychosis (as defined by the International Classification of Disease, ICD) from age 15 (1988–1993) until year 2003 from the National Patient Register. We chose this age as cut off because it is uncommon to be diagnosed before this age and diagnoses among younger individuals may therefore be unreliable. A total of six individuals had been diagnosed before age 15. We further excluded all individuals who had a hospitalization with any of the following primary diagnoses: schizophrenia, schizoaffective disorder or bipolar disorder. The reason for this is that these diagnoses are considered stable over time and were defined by us as outcome variables. Moreover, depressive disorder with psychotic symptoms was excluded because it is difficult to translate this diagnosis between different versions of ICD. Our final cohort comprised 1840 individuals. These patients were classified according to the following index diagnoses: persistent delusional disorder, psychotic disorder due to substance use, acute and transient psychotic disorder, and other psychoses.

2.2. Variables

2.2.1. Predictors

We assessed a number of potential predictors occurring before the first diagnosis that we categorized into six main categories: psychiatric factors, social factors, premorbid intellectual functional level, familial factors, and other predictors (including injuries to the head, injuries sustained during delivery, and obstetrical complications).

2.2.1.1. Psychiatric factors. We created three dichotomous variables using the National Patient Register. Only hospitalizations occurring before the first diagnosis for psychosis were considered.

- Former in-patient care with any psychiatric diagnosis
- Former in-patient care with a diagnosis for substance abuse
- Former in-patient care for intentional self-harm

2.2.1.2. Social factors. As indicator for severe criminality we selected convictions that led to severe sentences, i.e. imprisonment or probation. This information was obtained from the Register of Court Convictions.

Experience of interventions by the social services before age 12 is a well-known risk factor for mental health problems (Hjern et al., 2004; Vinnerljung et al., 2006). Child welfare intervention, retrieved from the Swedish Register of Children and Young Persons subjected to child welfare measures, was defined as out-of-home care or provision of a respite care. Parental social assistance dependency was measured when the individual was between ages 12 and 17. To fulfill this criterion, at least one parent had to be receiving social assistance during at least one year where more than 50% of the yearly income constituted social

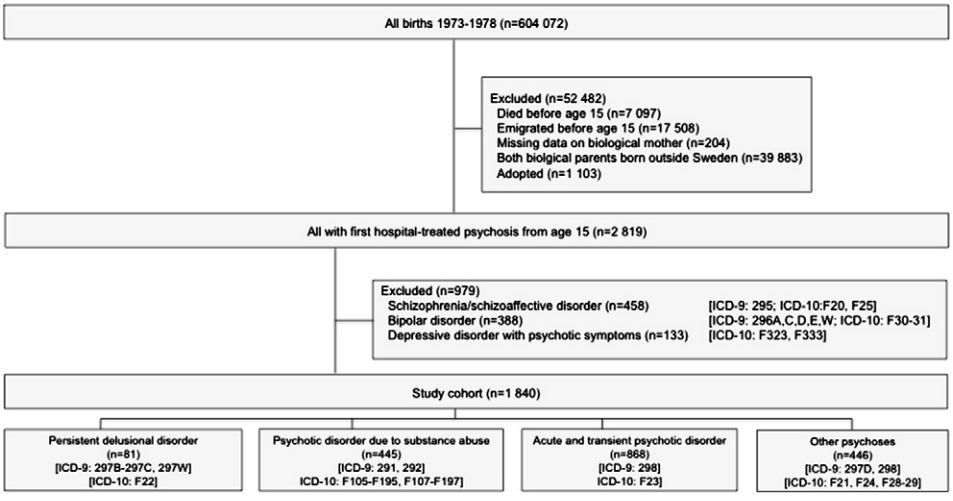

Fig. 1. Flow chart for the study population.