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Long-term follow-up of all-cause and unnatural death in young people with first-episode psychosis

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ABSTRACT

Objective: To determine mortality-related estimates and causes of death in young people with first-episode psychosis (FEP), and to identify baseline predictors of mortality.
Method: Mortality outcomes in 723 young people presenting to an early psychosis service were prospectively ascertained up to 20 years. Predictors of all-cause and unnatural death were investigated using survival techniques.
Results: Forty-nine participants died by study end. Most deaths (n = 41) occurred within 10 years of service entry. All-cause mortality was 5.5% at 10 years, rising to 8.0% after 20 years. Unnatural death rates at 10 and 20 years were 5.0% and 5.9%, respectively. Three risk factors consistently predicted all-cause mortality and unnatural deaths.
Conclusion: A substantial proportion of excess mortality was due to non-suicide unnatural death, and, later, natural deaths. This suggests that mental health services should expand their current focus on suicide to incorporate strategies to prevent accidental death and promote healthier lifestyles.

1. Introduction

Life expectancy of persons diagnosed with a psychotic illness is substantially lower than that of other members of the community (Saha et al., 2007). Risk of suicide, particularly in patients with a diagnosis of schizophrenia has been the focus of much research (Limosin et al., 2007). However, understanding and possibly ameliorating excess mortality require the study of a broad spectrum of causes of death in persons ascertained at the onset of their first episode of illness.

Most studies investigating incidence and predictors of mortality in patients with first-episode psychosis (FEP) have relatively short follow-up intervals (Bertelsen et al., 2007) and substantial heterogeneity in the age of participants (Craig et al., 2006; White et al., 2009). Mortality studies need to span sufficient time to observe their outcome. Risk of type of death changes with age, with older patients more likely to die of natural causes, albeit prematurely. Curtailing the period of observation potentially distorts outcomes. Other studies are limited by their retrospective designs (for example, De Hert et al., 2001; Robinson et al., 2010a), which potentially introduces more sources of bias and confounding than prospective studies.

Recently, Dutta et al. (2011) determined the mortality status of a large cohort of FEP patients (n = 2132) from four UK clinical services an average 13.4 years after initial diagnosis. Male gender and overall symptom load were established as predictors of risk. This is an important contribution but was necessarily retrospective and covered patients diagnosed so long ago as to make uncertain the applicability to patients currently entering treatment.

In common with many studies of first-episode samples (Limosin et al., 2007; Harris et al., 2008; Pompili et al., 2011), focus on suicide alone fails to accommodate the competing nature of different causes of mortality. Premature death may also result from heightened risk of accident, drug use and mortality related to lifestyle factors (Ruschena et al., 1998). It may be difficult to distinguish suicide from other causes of mortality. Failure to accommodate competing causes may result in overestimation of the cumulative incidence of individual causes of mortality (Satagopan et al., 2004).

1.1. Aims of the study

This study sought to prospectively examine long-term mortality outcomes of 723 young people with FEP aged 14–30 years at service entry

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by reporting the incidence and causes of death over a 20-year period, and to identify the prognostic significance of a range of features of the premorbid clinical profile and early course of illness.

2. Material and methods

2.1. Sample

The study cohort comprised 723 FEP patients in a prospective, long-term follow-up study full details of which have been published (Henry et al., 2007). Briefly, at ascertainment patients were aged 14–30 years and had a DSM-IV diagnosis of a psychotic disorder (schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, bipolar psychotic disorder, major depressive disorder with psychotic features, brief reactive psychosis/brief psychosis and psychosis not otherwise specified).

2.2. Predictors of mortality

Selection of predictors was informed by existing suicide and mortality literature, and consideration of variables available from the comprehensive research assessment battery documenting the demographic, diagnostic and clinical features of the illness. Predictors used in the initial, univariate analyses are presented in Table 1.

2.3. Diagnosis

Psychotic diagnoses at baseline for the 723 subjects were systematically ascertained using the Royal Park Multidiagnostic Instrument for Psychosis (RPMIP; McGorry et al., 1990a,b) or the SCID-I/P (First et al., 2002). Cases were classified into one of five diagnosis groups: schizophrenia and schizophreniform disorders (SCZ-S); schizoaffective disorder, bipolar disorder; depressive psychosis; and other psychotic disorders (see Section 2.1).

2.4. Demographic, illness duration and clinical variables

The majority of the 723 subjects (79%) were assessed with the RPMIP during the initial episode to assess illness duration components, and other clinical and demographic variables. The remaining 21% received less detailed assessments in accordance with study design protocols.

Information derived from the RPMIP included age at service entry and age at onset of prodromal features, and of psychosis, and duration of untreated psychosis, sex, marital status, education, work status, parental status, whether the subject was living alone, previous drug therapy, history of violent behaviour and family histories of psychiatric illness and suicide. The presence/absence of the following prior to presentation was also established: psychosocial stressor in previous year; stress immediately before onset, deliberate self-harm; and poor premorbid social adjustment/work history. The RPMIP also assessed symptomatology in the presenting episode, including: suicidal tendencies; poor insight; hopelessness; and percentage of episode depressed. Alcohol and illicit drug use was classified as non-problematic versus problematic use. Maximum regular daily dose of neuroleptic medication was recorded in CPZ equivalents.

2.5. Psychopathology

Subjects assessed with the RPMIP also received psychopathology assessments scheduled to be administered within the first few days following entry into treatment (index presentation; T1) and again at symptom remission/stabilisation (median 2.0 months after index presentation; T2). Psychopathology was assessed using the 18-item Brief Psychiatric Rating Scale (Overall and Gorham, 1962; Lukoff et al., 1986; McGorry et al., 1988) and the Schedule for the Assessment of Negative Symptoms (SANS; Andreasen, 1982). A positive symptom subscale (BPRSPS; score range 0–24) was derived from the BPRS, comprising items measuring conceptual disorganization, hallucinatory behaviour, unusual thought content and suspiciousness. The 13-item Beck Depression Inventory (BDI; Beck and Beck, 1972) assessed level of depression at T2.

Table 1
Baseline characteristics of participants: Means with standard deviations (SD) or percentages (%) with counts.

Baseline characteristics	Evaluable cases	Mean or percentage (%)	SD or count (N)
Sociodemographic and clinical features			
Age at service entry, years	723	21.9	3.6
Age at onset of psychotic symptoms, years	571	21.5	3.6
Gender, % male	723	69.4	(502)
DSM-IV diagnosis, %	723		
Schizophrenia/schizophreniform		57.3	(414)
Depressive psychosis		12.0	(87)
Bipolar		13.0	(94)
Schizoaffective		9.5	(69)
Other		8.2	(59)
Duration untreated psychosis, days	579	186.6	430.3
Median		48.0	
Duration of prodrome, days	566	339.2	534.8
Median		134.5	
Duration of untreated illness, days	566	503.7	659.0
Median		253.0	
Marital status, %	614		
Never married		85.0	(522)
Married/defacto		10.7	(66)
Prev partnered		4.2	(26)
Educational level, %	570		
Incomplete secondary		59.1	(337)
Completed secondary/trade/tech		34.0	(194)
Completed tertiary		6.8	(39)
Work status, %	571		
Employed		64.8	(370)
Student/home duties		21.7	(133)
Unemployed		1.6	(68)
Maximum regular daily dose of neuroleptics (CPZ equivalent), %	561		
≤250		50.4	(283)
>250 to 500		28.5	(160)
>500 to 750		8.9	(50)
>750 to 1000		5.7	(32)
>1000		6.4	(36)
Previous self-harm	563	20.6	(116)
Percentage of episode depressed (more than 50%)	570	28.8	(164)
Hopelessness	557	25.3	(183)
Poor premorbid social adjustment or work history	549	25.0	(137)
Family history of suicide	560	4.8	(27)
Family history of psychiatric illness	566	56.5	(320)
Suicidal tendencies	552	29.0	(210)
Poor insight	571	70.9	(405)
Problem alcohol use	571	13.7	(78)
Problem drug use	570	54.2	(309)
Parental status	571	10.3	(59)
Living alone	571	8.6	(49)
Drug therapy prior to service entry	565	22.5	(127)
History of violent behaviour	561	16.0	(90)
Psychosocial stressor in previous year	550	40.4	(222)
Stress immediately before onset	541	17.4	(94)
Psychopathology			
Baseline BPRS total score	507	28.5	9.6
Baseline BPRS psychotic subscale	506	10.5	3.8
Baseline SANS total score	455	23.1	15.4
BPRS total score at stabilisation	544	13.7	8.3
BPRS psychotic subscale at stabilisation	544	3.4	3.5
SANS at stabilisation	507	18.2	15.0
BDI at stabilisation	491	7.2	7.0