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Early risk factors for suicide in an epidemiological first episode psychosis cohort

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ABSTRACT

Background: Much remains unknown about whether there are early risk factors for suicide in psychosis.
Aim: The aim of the study was to determine whether there are any identifiable early symptom clusters, aetiological factors or illness course markers for suicide in first episode psychosis.
Method: A total of 2132 patients with first episode psychosis presenting to secondary care services in London (1965–2004; $n=1474$), Nottingham (1997–1999; $n=195$) and Dumfries and Galloway (1979–1998; $n=463$) were traced after up to 40 years (mean 13 years) following first presentation. Risk factors were identified from the Operational Checklist for Psychotic Disorders rated for the first year following presentation.
Results: Overall, there were 51 suicides and 373 deaths from other causes. Male gender (RR 2.84, 95% CI 1.20–6.69, $p=0.02$) and a cumulative threshold effect of symptoms early in the illness (RR 6.81, 95% CI 2.33–19.85, $p<0.001$) were associated with a higher propensity for later completed suicide. There was also a suggestion that early manic symptoms might increase the risk of later suicide irrespective of initial diagnosis.
Conclusion: Suicide risk was associated with a cumulative threshold effect of symptoms and manic symptoms. As suicide is a relatively rare event in psychotic disorders, general population-based prevention strategies may have more impact in this vulnerable group as well as the wider population.

1. Introduction

Suicide is one of the main causes of excess death in psychotic disorders (Ösby et al., 2000, 2001). Saha et al. (2007) estimate the risk in schizophrenia to be 13 times greater than in the general population. Reducing the risk of suicide amongst patients with psychosis is an international public health priority and considerable work has been done to identify specific risk factors (Hawton et al., 2005a,b; Pompili et al., 2007). Most risk factor studies to date have made a clear distinction between studying either schizophrenia and related non-affective psychosis or affective disorders. However, recent evidence, particularly from genetic studies, suggests that these are far from distinct disease entities (Cardno et al., 2002; Owen et al., 2007) and clinical diagnosis is known to vary over time (Amin et al., 1999; Veen et al., 2004).

The nature of the study design of previous research must also be taken into account when interpreting the findings. For example in a case–control study, if the controls are population-based, living patients, with the same psychotic illness as the completed suicide cases, the study will assess risk factors for suicide in the population of psychotic patients (Pompili et al., 2009; Reutfors et al., 2009) and this will include risk factors for suicide incidental to the diagnosis of a psychotic

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illness. Whereas if controls are suicides by people with other disorders (McGirr and Turecki, 2008), this investigates a very different question about which factors are specific to suicide in psychotic illness.

A study design which provides strong evidence is a long-term cohort study, such as that conducted by Limosin et al. (2007) for schizophrenia in 3434 French patients. This study had the additional advantage that factors relating to clinical risk, such as smoking status, alcohol problems, illicit drug use and previous suicide attempt were recorded. However, a drawback in the design was that it was based on a prevalence population recruited from all patients attending either as inpatients or outpatients during a specified period rather than an incident cohort.

In the UK, Osborn et al. (2008) carried out a general practice research database study of demographic and family practice health service predictors in a large cohort of patients with schizophrenia ($n = 18{,}555$; 48 suicides), bipolar disorder ($n = 10{,}742$; 41 suicides) and other severe mental illness ($n = 16{,}839$, 54 suicides). They chose variables such as consultation rate, use of antidepressant medication and social deprivation quintiles, which are known to be valid and reliable in this working clinical database. Yet once more, this cohort was based on all patients with the appropriate diagnoses rather than incident cases, so the conclusions of higher risk being associated with increased consultation rates, antidepressant prescribing and living in less deprived areas have to be interpreted knowing that they apply to patients at diverse stages of their illness rather than a complete cohort from initial onset.

Previous studies have often sought to identify risk factors relating to the period leading up to suicide, e.g. noncompliance with medication in the month prior to death, inpatient or outpatient status, or loss of contact with mental health services (Hunt et al., 2006). There has been very little research into whether factors identifiable early in the illness course are markers for later suicide, although De Hert et al. (2001) found that early onset of a defect state in young people with schizophrenia (under the age of 30 years) was protective from suicide. We have used an inception cohort design to investigate potential early risk factors for suicide in a large cohort of first onset psychosis patients with a long follow-up period (mean more than 13 years).

2. Materials and methods

2.1. Study population

The study population comprised first onset cases from three UK locations (London, Dumfries and Galloway and Nottingham).

2.1.1. London

Demographic and clinical data were collected on all patients who presented to secondary care services with any psychotic presentation over four decades (1965–2004) in Camberwell, a densely populated, urban inner-city area, geographically aligned to the southern portion of the London borough of Southwark. For the period 1965–1984 this was compiled using the Camberwell Cumulative Psychiatric Case Register (Castle et al., 1991; Wing and Hailey, 1972) and then for 1984–2004, hospital computer records were used to generate a list of all patients admitted with any possible psychotic illness (ICD-9 codes 295, 295.6, 297, 296.0, 296.2, 296.4, 298, 292.1 and ICD-10 codes F20, F25, F22, F30, F31.3, F31.2, F31.6, F28, F29, F12.5, F16.6, F19.5, F16.75, F19.75) in the catchment area. In addition, all case records of patients from the area were examined to identify those who made contact with services but were not admitted. The records of those not admitted were of a similar quality to those admitted. Patients who were admitted to hospitals outside the area would usually be transferred back to local hospitals or referred to local services for continuing care. These records were also identified in the comprehensive search of all case notes. All patients' records were checked to ensure that they were true incident cases (i.e. had not had prior psychiatric treatment for a possible psychotic illness). For the years 1997–1999, a wider catchment area of thirty-three adjacent electoral wards in Lambeth and Southwark was included (the ÆSOP study) (Fearon et al., 2006; Kirkbride et al., 2006) for individuals in the age-range 16–64 years. From 2000 to 2004, resource limitations meant that the study was restricted to a smaller area consisting of the nine most southern contiguous electoral wards (approximately two-thirds of the original Camberwell population). The Joint South London and Maudsley and the Institute of Psychiatry Research Ethics Committee approved the London part of the study.

2.1.2. Dumfries and Galloway

The Dumfries and Galloway cohort was that identified for a study conducted in parallel with the London study (Allardyce et al., 2001). Dumfries and Galloway is a relatively sparsely populated, mainly rural area comprising predominantly (99.5%) White residents (Kirkpatrick et al., 2002). All residents who had come into first contact with psychiatric services with a psychotic disorder between 1979 and 1998 were included in the cohort. Cases were obtained from two main sources: (i) the data for inpatients held centrally in Edinburgh by the Information and Statistical Division of the Scottish Office and (ii) locally held registers of outpatients, domiciliary visits and 'after hours' referrals (Kirkpatrick et al., 2002). The case ascertainment procedures were designed to be as comprehensive as and comparable with those described for London (Allardyce et al., 2001). Approval for this part of the study was obtained from the Dumfries and Galloway Health Board Research Ethics Committee and the privacy Committee of the Information and Statistical Division (ISD) Scotland.

2.1.3. Nottingham

The Nottingham cohort (from a mixture of urban, suburban and rural environments) was that identified in the ÆSOP study (1997–1999) which aimed to investigate the cause of high rates of psychosis in certain minority ethnic populations in the UK (Kirkbride et al., 2006) and was ascertained in parallel with the London sub-sample collection over this 3-year period (Reininghaus et al., 2010). All those who presented for the first time as an inpatient or outpatient to any psychiatric service (including adult community mental health teams, inpatient units, adolescent mental health services, drug and alcohol units, forensic services and learning disability services) because of psychotic phenomena