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Use of psychiatric medications in schizophrenia and other psychoses in a general population sample

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ABSTRACT

The information on the use of psychiatric medications in general population-based samples is limited. Our aim was to analyse the use of psychiatric medications and factors associated with antipsychotic use in psychoses in a general population sample. Fifty-five persons with schizophrenia, 21 with bipolar psychosis or psychotic depression and 20 with other psychoses from the Northern Finland Birth Cohort 1966 were examined at about 43 years of age. The frequency of use and dosage of psychiatric medication and the factors associated with the use of antipsychotics were analysed. Antipsychotics were used by 85% of schizophrenia, 65% of bipolar psychosis or psychotic depression and 62% of other psychoses cases; antidepressants were used by 22%, 60% and 33%; and benzodiazepines by 42%, 35% and 10%, respectively. In all the diagnostic groups, higher symptom scores and a higher number of hospital days were associated with the use of antipsychotics. In schizophrenia and other psychoses, poorer social and occupational functioning, and in other psychoses, female gender and lower education were also associated with the use of antipsychotics. Our results may partly indicate that, especially in schizophrenia, the effectiveness of antipsychotics is not as good as expected.

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1. Introduction

Psychiatric medication plays an important role in the treatment of schizophrenia and other psychoses (Jönsson et al., 2011). For example, the risk of relapses increases without antipsychotic treatment (American Psychiatric Association, 2004; Leucht et al., 2012). However, there is a lack of evidence of the effectiveness of antipsychotics after the first two years of illness in schizophrenia (Leucht et al., 2012). In fact, the long-term effectiveness of antipsychotics has recently been questioned (Wunderink et al., 2013; Harrow et al., 2014), and guided discontinuation has been suggested for first-episode psychosis patients who have achieved sustained remission (Wunderink et al., 2013).

Some schizophrenia patients use no antipsychotic medication, and the rate of medicated schizophrenia cases at a certain study point or period varies from 21% to 99% (Hopper et al., 2007; Mundt et al., 2012; Kiviniemi et al., 2013b; Suokas et al., 2013; Harrow et al., 2014). In a large ($n=$ 16,083) Finnish naturalistic schizophrenia sample, 76–81% of schizophrenia cases used antipsychotic medication (Kiviniemi et al., 2013a,b; Suokas et al., 2013). Most patients nowadays use atypical antipsychotics (Ciudad et al., 2008; Tiihonen et al., 2009; Kiviniemi et al., 2013a,b), and the frequency of antipsychotic polypharmacy varies from 18% to 67% (Xiang et al., 2007; Kroken et al., 2009; Mundt et al., 2012; Suokas et al., 2013). The range of patients using benzodiazepines or anxiolytics/sedatives in general varies from 15% to 91% (Vares et al., 2011; Mundt et al., 2012; Waterreus et al., 2012) and the use of antidepressants from 17% to 64% among schizophrenia patients (Vares et al., 2011; Mundt et al., 2012; Waterreus et al., 2012; Kiviniemi et al., 2013a).

In psychoses other than schizophrenia the frequencies are somewhat different. The second Australian national psychosis

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survey revealed that 89% of persons with schizoaffective disorder, 75% of those with bipolar mania, 57% of those with depressive psychosis and 76% of those with other non-organic psychoses had used antipsychotics during the last 4 weeks. The use of antidepressants in these diagnostics groups was 39%, 40%, 69% and 44%, respectively. Anxiolytic/hypnotics use ranged from 15% to 22% (Waterreus et al., 2012).

Certain factors are associated with the use of antipsychotic medications. Compared with those who do not use antipsychotics, those who use them are more often male (Usall et al., 2007; Ciudad et al., 2008; Suokas et al., 2013), have more severe psychotic symptoms and greater disease severity (Kroken et al., 2009; Jönsson et al., 2011; Vares et al., 2011), diagnosis of schizophrenia (Waterreus et al., 2012; Kiviniemi et al., 2013b) and live in an area that prefers the use of antipsychotic medication (Hopper et al., 2007). Compared with factors associated with antipsychotic use in general, more studies have been conducted on predictors of antipsychotic polypharmacy (Kroken et al., 2009; Suokas et al., 2013).

Most current care algorithms of schizophrenia recommend the use of antipsychotics and doses within a certain range (American Psychiatric Association, 2004; Gaebel et al., 2005). The use of antidepressants is also highlighted when experiencing depression symptoms (Gaebel et al., 2005), whereas the use of benzodiazepine may relate to mortality and thus may need consideration (Tiihonen et al., 2012). The extent of the use of these psychiatric medications and the factors associated with the use of antipsychotics in real life and in general population-based samples are not fully understood. Only a few studies have addressed the use of psychiatric medications (Waterreus et al., 2012; Kiviniemi et al., 2013a,b; Suokas et al., 2013) and factors relating to the use of antipsychotics (Waterreus et al., 2012) in a representative population-based sample. Additionally, to our knowledge there are no studies that analyse separately the factors associated with antipsychotic use in other psychoses. The purpose of this study was to explore the frequency of use of antipsychotics and other psychiatric medication in three groups: schizophrenia, bipolar psychosis and psychotic depression, and other psychosis in a general population sample at about 43 years of age. More specifically, the aims of this study were:

- to find out how many of the Northern Finland Birth Cohort 1966 subjects with a lifetime diagnosis of schizophrenia, bipolar psychosis or psychotic depression or other psychoses used antipsychotics and other psychiatric medications at the age of 43,
- to study daily dosages of used psychiatric medications and
- to identify background factors associated with the use of antipsychotic medications

2. Methods

2.1. The Northern Finland Birth Cohort 1966

The Northern Finland Birth Cohort 1966 (NFBC 1966) was identified in mid-pregnancy as an unselected, general population birth cohort and comprised 12,058 children born in the provinces of Lapland and Oulu in Northern Finland. The NFBC 1966 project was approved by the Ethical Committee of the Northern Ostrobothnia Hospital District, which reviews its study design continuously. The hospitalisation data in the present study were obtained from the Care Register for Health Care (formerly the Finnish Hospital Discharge Register), which includes all general, mental and private hospitals as well as all inpatient wards of local health centres. The current estimate is that approximately 81% of all patients with non-affective psychotic disorder are hospitalised and appear in the Care Register (Perälä et al., 2007).

Any cohort member who appeared in the Care Register at the end of 1997 was included for case record scrutiny, diagnosis assessment for DSM-III-R criteria and diagnosis re-review under a professional panel, given that the cohort member was over 16 years of age and had a known mental disorder (i.e. ICD-8 diagnoses 290-309, ICD-9 290-316, and ICD-10 F00-F69, F99). The diagnosis assessment procedure was tested for reliability with respect to diagnosis of schizophrenia (kappa = 0.85; Isohanni et al., 1997; Moilanen et al., 2003). In addition, we detected new psychosis cases who had developed a psychosis between 1998 and 2008 according to the Care Register; had indications of a psychosis in the register data of the Social Insurance Institution of Finland at the end of 2008 (i.e. sick leave or disability pension due to psychosis or a right to reimbursement for psychoactive medication); or had reported having psychosis or current high-dose antipsychotic use (over 300 mg chlorpromazine equivalents) at 31 years of age in the questionnaire data. Based on this information, 258 cohort members with a psychosis diagnosis and a known address were asked to participate in a psychiatric study performed in 2008–2011. An examination of a subgroup of this sample has been reported earlier (Husa et al., 2014; Veijola et al., 2014). This is the first study to present the whole sample.

2.2. Interviews at about 43 years of age

Altogether, 100 (38.9%) individuals with known lifetime psychosis diagnosis participated in the interview and examination in 2008–2011. Out of these, we had adequate information on the use of psychiatric medications for 96 individuals.

A SCID-I interview leading to DSM-IV lifetime diagnoses was performed for all 96 participants. Based on all available information (including register diagnoses, hospital notes and the SCID-I interview), 55 cases with schizophrenia, 20 cases with bipolar psychosis ($n=7$) or psychotic depression ($n=13$) and 21 cases with other psychoses (2 schizophreniform disorder, 8 schizoaffective disorder, 2 delusional disorder, 3 brief psychotic disorder and 6 psychosis NOS) were included in the current study. Informed consent was obtained in written form from all participants.

Those who did not participate ($n=162$) did not differ statistically significantly from our final sample ($n=96$) in terms of gender, number of hospital treatment episodes and age of illness onset. There were no significant differences in the participation rate of schizophrenia cases (38.2%), subjects with bipolar psychosis and psychotic depression (41.7%) and other psychoses cases (31.8%). Compared with non-participants, the participants were more often on disability pension (12.3% vs 22.9%, $p=0.036$). Based on register data on educational level in 1997, those with secondary education participated most often (the participation rate among those with basic education was only 21.3%, while among those with secondary education it was 44.1% and those with tertiary education 25.0%, $p=0.003$).

2.2.1. Data on the use of psychiatric medication and treatment contact

The interview included questions on the subjects' medication history for the previous 3 months. The name of the psychiatric drug or compound and the daily dose taken were recorded. The drugs used were classified according to the Anatomical Therapeutic Chemical (ATC) classification system (WHO Collaborating Centre for Drug Statistics Methodology, 2010). Daily antipsychotic medication doses were converted into chlorpromazine equivalents (CPZ). Calculations of chlorpromazine equivalents were based mainly on the study by Kroken et al. (2009). Information on the type of medication (typical, atypical), injections and polypharmacy was also collected. Daily antidepressant and benzodiazepine doses were converted into defined daily doses (DDDs), the dose

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