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Screening for substance use disorders in first-episode psychosis: Implications for readmission

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ABSTRACT

Introduction: Screening of substance use may prove useful to prevent readmission after the first episode of psychosis. The aim of the present study was to evaluate the influence of drug use on readmission risk in a first-episode psychosis sample, and to determine whether the cannabis/cocaine subscale of the Dartmouth Assessment of Lifestyle Inventory (DALI) is a better predictive instrument than urinary analysis.
Methods: After admission, first-episode psychotic patients were interviewed for substance use and assessed with the DALI scale. They also underwent blood and urine sampling. Time to readmission was studied as a dependent outcome. The Kaplan–Meier estimator was applied to estimate the survival curves for bivariate analysis. The Cox proportional hazards model for multivariate analysis was assessed in order to control for potential confounders. ROC curve and validity parameters were used to assess validity to detect readmission.
Results: Fifty-eight patients were included. The DALI cannabis/cocaine subscale and urinalysis were associated with increased readmission risk in survival curves, mainly the first five years of follow-up. After controlling for potential confounding variables for readmission, only the DALI cannabis/cocaine subscale remained as a significant risk factor. In terms of validity, the DALI cannabis/cocaine subscale was more sensitive than urinalysis. Alcohol assessments were not related to readmission.
Conclusions: The findings demonstrated that a quick screening self-report scale for cannabis/cocaine use disorders is superior to urinary analysis for predicting readmission. Future research should consider longitudinal assessments of brief validated screening tests in order to evaluate their benefits in preventing early readmission in first-episode psychosis.

1. Introduction

Identifying modifiable prognostic factors for preventing recurrent psychotic episodes is an extremely important issue (Lambert et al., 2005). Misuse of tobacco, alcohol, cannabis and other illicit substances is common among people with psychotic illnesses (Regier et al., 1990; Kavanagh et al., 2002; Margolese et al., 2004). A high prevalence of substance misuse is also characteristic of patients with first-episode psychosis, with rates varying from 22% to over 50% (Cantwell et al., 1999; Van Mastrigt et al., 2004; Lambert et al., 2005; Larsen et al., 2006; Addington and Addington, 2007; Wade et al., 2007; Baeza et al., 2009; Kamali et al., 2009). Drug misuse, especially cannabis in the early stages of psychosis, has been associated with younger age of onset (Cantwell et al., 1999; Van Mastrigt et al., 2004; Addington and Addington, 2007; Sugranyes et al., 2009), increased symptoms (Lambert et al., 2005; Addington and Addington, 2007; Baeza et al., 2009), poorer treatment compliance (Buhler et al., 2002; Green et al., 2004; Zammit et al.,

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2008), higher rates of relapses and more hospitalizations (Linszen et al., 1994; Cantor-Graae et al., 2001; Salyers and Mueser, 2001; Sorbara et al., 2003; Zammit et al., 2008). Therefore, good screening for substance use during this phase of the illness may prove useful as a predictor of relapse. In spite of this, few longitudinal studies have investigated the impact of substance use on readmission to hospital. Detection and screening of substance use are typically undertaken through clinical interviews, patients' self-reports or toxicological tests. Urinalysis, though reliable and valid, has a narrow window of detection; for their part, structured diagnostic procedures are able to identify a high prevalence of drug use disorders but they are not practical on a day-to-day basis (Bennett, 2009). Research on screeners suggests that brevity is essential for an instrument to be adopted for regular use (Tiet et al., 2008). Although several screening scales are available (Tiet et al., 2008), they are not routinely studied in longitudinal cohorts involving psychotic patients, since these cohorts usually use self-report measures (Grech et al., 2005; Stirling et al., 2005; Hides et al., 2006; Degenhardt et al., 2007), structured interviews (Coldham et al., 2002; Green et al., 2004; Pencer et al., 2005; Wade et al., 2006) or urine drug screening (Grace et al., 2000; Hides et al., 2006). Therefore, their potential influence on outcome measures such as readmission is not frequently considered. Furthermore, screening measures may miss many diagnoses due to their having been developed in the general population or in primary substance abusing samples, with the result that their relevance to people with severe mental illness is doubtful (Bennett, 2009). One potential solution may be the use of screening measures specifically developed for people with psychiatric disorder (Bennett, 2009), such as the Dartmouth Assessment of Lifestyle Inventory (DALI), an 18-item screening questionnaire designed to identify substance use and abuse in people with severe mental illness. The scale contains two subscales: one for assessing the risk of alcohol use disorders and the second for assessing the risk of cannabis and/or cocaine use disorders. The main strengths of the scale are its brevity, as the mean time of administration is approximately 6 min, and its high classificatory accuracy for alcohol, cannabis and cocaine use disorders (Rosenberg et al., 1998; Ford, 2003). However, it has not yet been used to evaluate outcome measures in first-episode psychosis cohorts such as risk for readmission, and its predictive validity has not been explored.

The aim of the present study was to evaluate the influence of drug use on readmission risk in a first-episode psychosis sample, and to establish whether the DALI cannabis/cocaine subscale is a better predictive instrument than a positive urine sample.

2. Methods

2.1. Subjects

Non-affective first-episode psychotic patients were consecutively recruited at the time of their first clinical contact for psychotic symptoms at a general academic hospital (Hospital Clinic, Barcelona). As part of the Spanish National Health System, the hospital offers inpatient and outpatient services to the 560,000 inhabitants who live in the surrounding catchment area. The area is a relatively homogeneous middle/upper-middle class neighborhood in the center of the city, in which Hospital Clinic is the regional referral center for psychosis. The patients met criteria for schizophrenia, schizophreniform disorder, brief psychotic disorder, delusional disorder or psychosis not otherwise specified and had a maximum cumulative (lifetime) antipsychotic exposure of one week and no antipsychotic use in the 30 days prior to the study (although in this particular study, all subjects were drug naïve). Subjects were allowed to receive antianxiety medication (lorazepam) the night before blood was drawn, up to a maximum of 3 mg, but not on the day of the assessment. Additional inclusion and exclusion criteria for all subjects were: 1) age from 18 to 64 years, 2) no history of diabetes or other serious medical or neurological condition associated with glucose intolerance or insulin resistance (e.g. Cushing's disease), and 3) not taking medication associated with insulin resistance (hydrochlorothiazide, furosemide, ethacrynic acid, metolazone, chlorthalidone, beta blockers, glucocorticoids, phenytoin, nicotinic acid, cyclosporine, pentamidine, or narcotics).

One hundred and seven eligible patients were admitted during the study period. After excluding patients who did not have an address in the hospital catchment area (n = 39; 36.4%), patients not discharged during the recruitment period (n = 3; 2.8%) and patients whose blood/urine sample was not collected within 48 h (n = 7; 6.5%), the final sample consisted of 58 patients. There were no differences in baseline socio-demographic or clinical data between the excluded group and the study group: the variables assessed were age, gender, race, marital status, level of education and psychiatric history in first-degree relatives, scores on the Spanish version of the Positive and Negative Syndrome Scale for Schizophrenia (PANSS) (Peralta and Cuesta, 1994) and duration of untreated psychosis (DUP). DSM-IV diagnoses for the subjects included were schizophrenia (n = 40; 69.0%), brief psychotic disorder (n = 5; 8.6%), schizophreniform disorder (n = 4; 6.9%), and psychosis not otherwise specified (n = 9; 15.5%).

2.2. Procedures

Patients experiencing non-affective psychotic symptoms were consecutively admitted to the inpatient unit after their first contact with one of the hospital's psychiatric services. The recruitment period was from 1st January 2004 to 31st October 2010. All patients and their close relatives were carefully interviewed to ensure that inclusion and exclusion criteria were met. After discharge, the patients were followed up by outpatient services. All the interviews, assessments and follow-ups were performed by two fully trained psychiatrists in adult psychiatry (CGR and EFE). The main outcome was the time until first readmission to the hospital's inpatient unit. The follow-up time period was defined as days since discharge from the index admission until readmission or censoring from the study. The end of the study was set at 30th April 2011.

All subjects were interviewed using the Spanish version of the Structured Clinical Interview for DSM-IV Axis I Disorders, clinician version (SCID-I) (First and Spitzer, 1999). They were also administered the Spanish version of the PANSS (Peralta and Cuesta, 1994) and the DALI (Rosenberg et al., 1998). The DALI, which is based on 18 items—three non-scored used to establish the frame for the interview, and 15 scored—focuses on detecting substance use disorders in people with severe mental illness, and includes alcohol and drug screen subscales. The items of the scale were selected from ten instruments, and the scale was validated against the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer et al., 1988) and the Clinician Rating Scale (Drake et al., 1990). The DALI drug screen had a sensitivity = 1.0, specificity = 0.80, positive predictive value (PPV) = 0.56 and negative predictive value (NPV) = 1.0, accuracy rate = 88%, kappa = 0.98, and area under the receiver operating characteristic (ROC) curve (AUC) = 0.93 for cannabis and cocaine disorders (Rosenberg et al., 1998). Among the nine questions related to alcohol, item 7, for example, assesses whether close friends or relatives have shown concern about the subject's alcohol use; and item 9 whether the subject sometimes drinks alcohol soon after getting up. Among the eight questions in the drug scale, item 13 assesses whether marijuana has caused the subject to lose a job; and item 16 whether cocaine use has caused the subject problems with close relatives. The socio-demographic variables recorded included: age, gender, race, marital status, level of education and psychiatric history in first-degree relatives. Self-reported drug use was recorded with a systematic ad hoc protocol which assessed whether tobacco, alcohol, cannabis, cocaine, amphetamines, LSD or ecstasy had been taken in