The impact of substance use at psychosis onset on First Episode Psychosis course: Results from a 1 year follow-up study in Bologna

Ilaria Tarricone [a,b,c,*], Jane Boydell [c], Serena Panigada [a], Fabio Allegri [a], Thomas Marcacci [a], Maria Gabriella Minenna [b], Arnisa Kokona [a], Federico Triolo [a], Viviana Storbini [a], Rossella Michetti [b], Craig Morgan [c], Marta Di Forti [c], Robin M. Murray [c], Domenico Berardi [a,b]

[a] Department of Medical and Surgical Science, Section of Psychiatry, Bologna University, Italy
[b] Bologna West Mental Health Department, Ausl Bologna, Italy
[c] Department of Psychosis Studies, Institute of Psychiatry, King's College London, United Kingdom

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ABSTRACT

Objectives: Substance abuse is a well established risk factor for First-Episode Psychosis (FEP), but its influence on FEP course is less clear. Starting from our baseline observation that substance users were younger than non-users at the psychosis onset, we hypothesized that substance use at baseline could be an independent risk factor for a worse clinical course.
Methods: An incidence cohort of patients with FEP collected in an 8 year period (2002–2009) at the Bologna West Community Mental Health Centers (CMHCs) was assessed at baseline and at 12 month follow-up. Drop-out, hospitalizations and service utilization were used as clinical outcomes.
Results: Most of the patients were still in contact with CMHC at 12 month follow up. Substance users had a significantly higher rate of hospitalizations during the follow-up after adjusting for age, gender and other potential confounders (OR 5.84, 95% CI 2.44–13.97, p ≤ 0.001).
Conclusions: This study adds to previous evidence showing the independent effect of substance use on FEP course. The identification of a "potentially modifiable" environmental predictor of the course of the illness such as substance use at psychosis onset allows us to envisage the possibility of ameliorating the course of the illness by managing this factor.

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1. Introduction

Evidence has accumulated that several environmental factors increase the risk of an individual developing psychosis (van Os and Kapur, 2009). In particular, across time and place, including our own study conducted in Bologna (Tarricone et al., 2012), First Episode Psychosis (FEP) onset is associated with substance use, especially cannabis (Arsenault et al., 2002; van Os et al., 2002; Di Forti et al., 2009; Di Forti et al., 2014).

Some studies have shown that substance use is related to poorer outcome, with lack of adherence to medication, high number of drop outs and a high rate of relapse (Crebbin et al., 2009; Malla et al., 2008). However, it is not clear if substance use is an independent risk factor for a worse outcomes or if other factors associated with substance use as well as with poor FEP outcomes, such as male gender (Ceskova et al., 2011; Chang et al., 2011; Bertani et al., 2012); social adversity (being single, unemployed, less educated and living alone) (Boydell et al., 2013), are responsible for the unfavorable outcome.

Our study aimed to evaluate the clinical course of an incidence sample of First Episode Psychosis in Bologna West (Northern Italy), recruited from January 2002 to December 2009. Particularly we hypothesized that substance use at the psychosis onset would be an independent risk factor for worse outcomes after adjusting for possible confounders.

2. Materials and method

This study is part of the Bologna West First Episode Psychosis project (Bo-FEP) based in Northern Italy. As described in our previous work (Tarricone et al., 2012), Bo-FEP is a naturalistic incidence study that included all patients aged between 18 and 64 years, at their first episode of psychosis, who had a contact with one of the three Community Mental Health Centres (CMHCs) of the West Bologna area (CMHC "Nani", "Tiarini" and "Scalo") from January 2002 to December 2009. The Bologna West CMHC runs the Bo-First Episode Program for optimal management of first onset psychosis patients within the general outpatient mental health service.

The inclusion criteria are based on those used in the WHO study (Jablensky et al., 1992): i.e., presence of hallucinations, delusions, thought disorders, bizarre or disturbed behaviors, negative symptoms,

* Corresponding author at: Department of Medical and Surgical Science, Section of Psychiatry, Bologna University, Viale Pepoli 5, 40123 Bologna, Italy. Tel.: +39 051 6584292; fax: +39 051 521030.
E-mail address: ilaria.tarricone@unibo.it (I. Tarricone).

mania, or clinical suspicion of psychosis; absence of an organic cause or profound learning disability; and no previous contact with psychiatric services for psychotic symptoms.

Case notes were used to complete the Item Group Checklist (IGC), part of the SCAN (Schedule for Clinical Assessment of Neuropsychiatry, Version 2.1, World Health Organization—Division of Mental Health, Geneva 1998), to collect symptom-related data at the time of presentation and one month later to ensure that cases met ICD-10 criteria for psychotic disorders. Diagnoses were allocated by consensus agreement from a panel of psychiatrists at each study center, including the principal investigator (IT) and the clinical researcher who completed the ICG-SCAN. We considered 4 diagnostic groups: 1) affective psychoses (ICD F30–F33), 2) non-affective psychoses (ICD10 F20–29), 3) schizophrenia (ICD10 F20, including schizoaffective disorder F25), and 4) substance-induced psychoses (SIPs) (ICD10 F10–F19).

Age of onset was collected by asking the patients and/or key informants about when s/he experienced the first psychotic symptoms as defined above. Date of first contact with services was defined as the date when he/she was referred for the first time to Bologna West CMHC for his/her first episode of psychosis. For each participant, use of drugs was systematically derived from clinical charts and the psychiatrists responsible for the patients. The frequency of cannabis use and other drugs was recorded using the categories available from the Cannabis Experience Questionnaire's (CEQ) items (Barkus et al., 2006; Di Forti et al., 2009). Subjects who used drugs "few times each month" or more frequently in the month before their first experience of psychotic symptoms, were all combined in the same "current user" category, to prevent loss of statistical power.

2.1. Study design

We carried out a 12 month follow-up of an incidence cohort of FEP patients collected from January 2002 to December 2009. Operational definition of remission based on case notes data was used (Bebbington et al., 2006). Psychiatric hospitalizations (number and kind of psychiatric hospitalization—compulsory and voluntary) were considered as indicator of relapse and were evaluated from the clinical charts and from the local computerized information system (SIT); then this information was discussed with the clinicians responsible for the patient.

2.2. Statistical analyses

We initially used univariate analysis (chi square test for categorical data, Fisher's exact test for categorical data with small numbers or Wilcoxon signed rank test for nonparametric data) to study the associations between psychiatric hospitalizations and baseline variables. These variables were gender, age, place of birth, marital status, education, housing, occupational status, psychiatric diagnosis, DUP and substance use. In a multivariate logistic regression analysis we adjusted the associations found between substance use and hospitalizations for age, gender and all the statistically significant effects identified in first univariate analysis testing the addition of each factor using the Likelihood Ratio Test. Data were analyzed using SPSS for Windows Version 14.

3. Results

3.1. Sample description

One hundred sixty three patients were recruited at the baseline. The sample's socio-demographic and clinical characteristics at baseline are described in detail in our previous study[2]. 56% were male, showed a mean age at onset of 30 years, were on average one year older at first contact with the CMHC (31 years ± 9.4) and 39 (24%)

were migrants. They were mainly single (72%); 46% had a high school diploma, 43% were employed and 54% still lived with their family of origin. 80% had a DUP < 1 year and 41% received the ICD-10 diagnosis of Schizophrenia.

About one third of the sample (n 50, 31%) abused substances; they were all younger than 35 years of age (43% among patients younger than 35 years). Among substance users, 74% used cannabis (n 37), 44% (n 22) alcohol, 32% (n 16) stimulants or hallucinogens and 12% (n 6) opioids. More than half of the substance users were multidrug-users (n 26, 54%)

Users were significantly younger at psychosis onset (24.8 ± 4.7 v. 33.0 ± 9.8 years, p < 0.0001) as well as at the first contact with the mental health services (25.3 ± 4.6 v. 33.6 ± 9.9 years, p < 0.0001). FEP substance users were more frequently male. After adjusting for age and gender, patients with substance use were 2.8 times more likely to be native Italians.

As described in our previous study (Tarricone et al., 2012), among the substance users, 23 received a simple diagnosis of Substance-Induced Psychosis (F10–19); 27 received a dual diagnosis of non-affective psychosis (F20–29, n = 22) or affective psychosis (F30–33, n = 5) and substance-related disorder (abuse or dependence).

For all psychoses, the mean age at the onset and at first contact was significantly younger for men but not for affective or substance-related psychosis.

3.2. Clinical course

The clinical course of the sample is reported in Table 1.

One hundred thirty five patients (83%) were still receiving care at 12 months. Four patients (2%) achieved recovery from FEP as judged by the clinicians who had been in charge of the patients according to the Selten et al. (2007) criteria (absence of psychiatric symptoms and function on the pre-morbid level) and were discharged; 10 (6%) returned to their country of origin, 1 was referred to another CMHC for territorial jurisdiction and 13 (8%) stopped treatment without the clinician's agreement (drop-out).

After the onset and during the 12 month follow-up 13 patients (26% of the substance users) stopped substance-use.

Fifty nine (36% of the sample) required hospitalization at some point during the 12 month CMHC outpatient treatment.

Men showed a trend for a higher prevalence of hospitalization (39, 42% vs 20, 28%, c sq = 6.5, p = 0.061) and a significantly higher prevalence of compulsory admissions (24, 26% vs 7, 10%, c sq = 7.0, p = 0.008) compared to women. After adjusting for age, this association was not significant (Table 2).

Single patients showed a higher prevalence of hospitalization (52, 40% vs 7, 19%, c sq = 5.61, p = 0.018) than others. After adjusting for age and gender, the association was at trend level (Table 2). Finally, patients with a DUP < 1 years showed higher prevalence of hospitalization (52, 40% vs 5, 20%, c sq = 3.61, p = 0.058) that did not quite reach statistical significance (Table 2).

Table 1
Clinical course at 12 month follow-up (*p ≤ 0.05; **p ≤ 0.001).

	Substance users	Not substance users
No more in contact with psychiatric services	10(20%)	18(16%)
▪ Drop-out	5(10%)	8(7%)
▪ Return to country of origin	3(6%)	7(6%)
▪ Discharged because recovered	1(2%)	3(2.7%)
▪ Transfer for territorial jurisdiction	1(2%)	–
One or more hospitalizations	32(64%)	27(24%)**
▪ Compulsory hospitalization	17(35%)	14(12%)**