

Comorbidity schizophrenia and Psychoactive Substances Use

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Abstract : *The psychoactive substance use (SPU) is a very common comorbidity in schizophrenia; it poses the problem diagnosis, therapeutic as well as frequent relapses and long-term hospitalizations. The objective of our study is to study the frequency of this comorbidity in patients with schizophrenia, to determine its consequences and its risk factors. This is a cross-sectional study of 226 cases of patients with schizophrenia in hospital in the psychiatric Department of CHU Mohammed VI in Marrakech between January 1, 2017 and October 31, 2018. The mean age is 27.02 (\pm 9.4) years, with a male predominance of 67.2%, paranoid schizophrenia was the most common form 46.9%. SPA use was present in 63.7% of cases; cannabis was the most consumed substance (54.8%), followed by alcohol (21.2%), then benzodiazepines (15.9%). The use of spas preceded schizophrenia in 49.5% of cases. Users of psychoactive substances are characterized by male predominance 46%, early onset of schizophrenia, and acute entry mode. The positive psychotic symptoms were more severe with a higher number of criminal records, and suicidal attempts. Patients who are users of psychoactive substances have poor therapeutic adherence, and a higher number of hospitalizations and stop treatment.*

Keywords: Schizophrenia Comorbidity, Psychoactive substance use

1. Introduction

The prevalence of comorbidity schizophrenia and drug addiction is nearly 50% according to epidemiological studies conducted since the early 1990s [1], this interest is rooted in the various problems posed by this comorbidity: hospitalizations more frequent and longer, poor treatment adherence, increased suicidal behavior, increased medico-legal acts and aggressive behavior, social isolation and serious interpersonal problems. [2, 3, 4, 5]

In Morocco, mental health and drug addiction constitute a real public health problem. More than 200,000 people aged 15 and over suffer from schizophrenia, and 2.8% suffer from substance dependence, or 2% of the general population. But studies on the associations between drug addiction and mental disorders are very rare, according to a survey conducted in 2005 among 93 patients hospitalized at Arrazi de Salé Hospital, which revealed that cannabis is the first drug used in 41.3% mental patients. [6, 7] The pathophysiological processes of comorbidity schizophrenia and drug addiction are poorly understood. Current research is directed towards the study of brain mechanisms and structures that are common to both diseases, particularly those involving the endo-cannabinoid system. In the literature, three main models have been proposed to account for the frequency of this comorbidity:

Given the availability of psychoactive substances in our country and the importance of their consumption in schizophrenic patients, we conducted this study whose objectives are as follows

- 1) Determine the prevalence of this comorbidity
- 2) Determine the most consumed products
- 3) Understand this comorbidity and determine its risk factors
- 4) Evaluate the consequences of this comorbidity on the course of evolution of schizophrenia
- 5) Propose recommendations for the prevention and treatment of addictive behavior in schizophrenic patients.

2. Material and method

2.1 Type of study

This was a cross-sectional study of 226 patients with schizophrenia according to the diagnostic criteria of the fourth version of DSM IV, divided into two groups [8].

2.2 Inclusion criteria

Case sampling was comprehensive including all patients with schizophrenia according to the diagnostic criteria of the fourth version of the Diagnostic and Statistical Manual of Mental Disorders of DSM IV and who were hospitalized in the Department of Psychiatry University in Marrakech.

2.3 Variables under study

The comparison focused on:

a) Socio-demographic parameters:

Age, sex, socio-economic level, mode and place of life, level of education . . . ;

b) Family and personal psychiatric history: personal history of psychoactive substance use, type of substance used, antecedent suicide attempt, hospitalization in a psychiatric ward, length of stay in hospital. . . ;

c) The socio-economic level: occupation, conjugal status . . . ;

d) The clinic: form of schizophrenia according to the DSM IV, date and mode of onset of the disease, anteriorite compared to the beginning of the use of substances:

- Tobacco,
- Cannabis,
- Alcohol.

The support:

- The observance of the treatment,
- Received treatments,

We used in a second part five scales

- Positive and Negative Symptom Scale PANSS
- Fagerstrom Test For Nicotine Dependence (FTND)
- Cannabis Abuse Screening Test (CAST)
- Alcohol use disorders test (AUDIT)
- Cognitive Scale of Attachment to Benzodiazepines (ECAB)

2.4 Data collection

A bivariate analysis was done through the student test to compare two means, the chi2 test for the comparison of percentages.

2.5 Data analysis

The data capture and analysis were done by SPSS version 16. The qualitative variables were represented by their numbers and percentages, and the quantitative variables were described by the measure of central tendency and dispersion.

Bivariate analysis involved comparing percentages using both and Fischer and comparing the averages using Student's t-test. The 5% threshold was considered.

3. Results

3.1 Sociodemographic characteristics of participants

The average age of patients is 27.02 (± 9.4) and with a clear predominance male. 67.2%. 79.3% of divorced patients and 69.8% of single patients are SPA users. The rate of consumption of psychoactive substance was very important in patients of rural origin

We could not study the relationship between the use of psychoactive substance and the level of education because the minimum size required in the attributes to do the analyzes was not affected.

Patients using psychoactive substance are more inactive compared to non-users (Table 1).

3.2 Antecedents

Schizophrenic subjects with psychoactive substance use have more previous hospitalizations with a longer hospital stay than schizophrenics who do not use APS, and the number of suicidal acts is higher in patients with AS. Patients using psychoactive substance had a larger criminal history than non-client patients (p = 0.005) (Table 2).

3.3 Clinical features of the disease

In both groups, the paranoid form of schizophrenia was most prevalent. Patients who used psychoactive substance had an earlier onset of schizophrenia than non-use patients with a predominantly acute onset.

Table 1: Sociodemographic characteristics

Variables	Patients who use psychoactive substances	non-users of psychoactive substances
	Mean ± SD or n (%)	Mean ± SD or n (%)
Sex		
Man	104 (46)	48 (21.2)
Wife	40 (17.6)	34 (15)
Studies		
Yes	118 (52.2)	64 (28.3)
No	26 (11.5)	18 (7.9)
Professional Status		
Sans profession	110 (48.6)	44 (19.4)
Avec profession	34 (15)	
Résidence		
Urbain	90 (39.8)	196(59)
Rural	54 (23.8)	36 (15.9)
Marital Status		
Célibataire	86 (38)	42 (18.5)
Marié	20 (8.8)	26 (11.5)
Divorcé	38 (16.8)	14 (6.1)
Vit		
Seul	116 (51.3)	14 (6.1)
Famille	28 (12.3)	68 (30)
Revenumensuffaible		
Oui	86 (38)	42 (18.5)
Non	58 (25.6)	40 (17.6)

Table 2: Descriptions of the antecedents of the two groups of patients

	Patients who use psychoactive substances	Non-users of psychoactive substances
	Mean ± SD or n (%)	Mean ± SD or n (%)
Personal history of attempted suicide	119 (52.2)	65 (28.7)
Judicial History	49 (21.6)	20 (8.8)
Family history of hospitalization in a psychiatric hospital		
- <3	20 (8.8)	58 (25.6)
- 12	24 (10.6)	14 (6.19)
- >9	100 (44.2)	10 (4.4)
Average duration of hospitalizations:		
- <7 jours	14 (6.1)	46 (20.3)
- [7-15 jours]	34 (15)	24 (10.6)
- >15 jours	96 (42.4)	12 (5.3)

Table 3: The clinical features of schizophrenia

Variables	Patients Usager des SPA ± DS ou n (%)	Patients Non Usager des SPA ± DS ou n (%)	p
Average age of onset of schizophrenia	20,9 ans	22,5 ans	0,003
The mode of onset of schizophrenia:			
-Aigue	126 (55.7)	32 (14.1)	0,005
-Progressive	18 (7.9)	50 (22.1)	0,001
The clinical form of schizophrenia			
-Paranoid	63 (27.8)	43 (19)	0,005
-Dysthymique	46 (20.3)	20 (8.8)	0,003
-Désorganisée	19 (8.4)	9 (3.9)	0,001
-Déficiente	16 (7)	10 (4.4)	0,001
Positive psychotic symptoms:			
-légers	14 (6.1)	48 (21.2)	<0,001
-means	38 (16.8)	24 (10.6)	<0,001
-sévères	92 (40.7)	14 (6.1)	0,001
Negative psychotic symptoms			
-légers	40 (17.6)	22 (9.7)	0,005
-means	50 (22.1)	36 (15.9)	0,001

-sévères	54 (23.8)	24 (10.6)	0,001
Herapeutic compliance			
-Good	42 (18.5)	52 (23)	0,003
-poor	102 (45.1)	30 (13.2)	0,001

Patients using psychoactive substance had more severe positive psychotic symptoms and poor adherence than non-users. No significant difference in negative psychotic signs in both groups (Table 3).

4. Discussion

The combination of schizophrenia and an addictive disorder is very common. Indeed, all epidemiological studies confirm that the addictive comorbidities of schizophrenia concern a majority of patients. One of the first large-scale studies, the 1990 Epidemiologic Catchment Area (ECA) survey estimated that co-morbidity affected 47% of people with schizophrenia, compared with 13.5% in the general population and more than half of people with schizophrenia who have schizophrenia have a history of substance abuse [9].

Our results indicate that in schizophrenic patients hospitalized at the psychiatric university service of Mohammed VI University Hospital of Marrakech, 63.7% of psychoactive substance users are found, results similar to those of Harrisson et al. in 2008 who found a prevalence of comorbidity of 56% in a population of 152 patients [10], F. Elghazouani et al. in Fez in 2015 (60.2%)[11], and the Verdoux H. et al. 92 patients, half of whom have comorbidity (50%) [12] (Table 4).

Table 4: Characteristics of Substance Use in the Population Study

Variables	patients Use psychoactive substance ± DS or n (%)
Start age:	
<16 years	30 (13.2)
[16-25 years]	50 (22.1)
[26-35 years]	48 (21.2)
>35 years	16 (7)
Substances used:	
Tobacco	144 (63.7)
Cannabis	124 (54.8)
Alcohol	48 (21.2)
Benzodiazepines	36 (15.9)
Anticholinergic	10 (4.4)
Synthetic glue	4 (1.7)
Anteriority of use in relation to the disease:	
Before	112 (49.5)
At the same time	10 (4.4)
During the illness	22 (9.7)
Source of money for the purchase of SPA:	
Job	32 (14.1)
Family	100 (44.2)
Stealing	12 (5.3)
The desired effects:	
Euphoria	52 (23)
Relax	34 (15)
To sleep	28 (12.3)
Treat hallucinations	30 (13.2)

Anteriority of the use of APS in relation to the disease: In the majority of studies (13-14-15-16-17-18-19), substance abuse precedes schizophrenia in two-thirds of cases, 49.5%.

The substances used:

Cannabis is the most abused drug in our study with a percentage of 86.1%. Similarly, cannabis is the first drug consumed in the study of F. Elghazouani et al. [20], Verdoux et al. [21], Mauri et al. (49%) [22], and VazCarneiro et al. [23]. While it is the second drug consumed for other authors: David et al. 2003 (26.5%) [24], Dervaux et al. 2003 (10.4%) [25] (Table 5).

Relationship between psychoactive substance use and socio-demographic characteristics:

4.1 Sex

In our study, there is a clear predominance of male subjects in drug-addicted schizophrenic patients (72.2%). These characteristics are similar to those found in previous studies, 71% in the study by Leo J. et al [26], and 67.8% in the study by David J. et al [24].

4.2 The marital status

In our study (16.8% of divorced patients and 59.7% of single patients are users of PPS), as well as in studies of; Dervaux et al. F. Elghazouani et al. Comorbidity only increases the risk of living alone, whereas Liraud et al. found no significant differences between abusers and non-substance abusers [20; 24; 27] .

4.3 Professional status

In most studies, there are no significant differences between psychoactive substance use and non-psychoactive substance use schizophrenics with respect to occupational status (active / inactive) [20-24-25-28-29-30]. In our studies, schizophrenic patients with psychoactive substance use are more inactive compared to non-users.

4.4 Correlation between psychoactive substance use and patients' personal history

Correlation between psychoactive substance use and the criminal record:

In our study, as well as in most studies, schizophrenic patients using psychoactive substance are distinguished from non-users psychoactive substance with a larger forensic history 21.6% [20-27].

Relationship between psychoactive substance use and antecedents of suicide attempts

In our study as well as in several studies: Dervaux et al. [25], Verdoux et al. [31], and Soyka et al. [32], and Hambrecht et al. [33], Hawton et al. [34] An association between substance abuse and suicidal behavior in schizophrenia was found. 52.2% The study by F. Elghazouani et al. [20] as well as that of Liraud et al. [27] show the opposite.

It is difficult to conclude that the risk of suicide increases with cannabis, this risk may also be related to disinhibition due to consumption or a related depressive disorder, and especially to the fact that both disorders, suicide and substance abuse, are probably associated with a common personality characteristic, impulsivity [27] (Table 5).

- Correlation between psychoactive substance use and the clinical and therapeutic features of schizophrenia:
- Relationship between psychoactive substance use and age of onset of schizophrenia
- In our study, as in most studies, schizophrenia is more precocious in psychoactive substance users than non-users [20; 35; 25; 27] (Table 6)
- Relationship between psychoactive substance use and positive psychotic symptoms:

Positive symptoms reflect the excess or distortion of normal functions, they include distortions or exaggeration of deductive thinking (delusions), perception (hallucinations), language and communication (disorganized speech), and control behavioral (grossly disorganized or catatonic behavior). [36] In our study, as well as in some studies, it was found that schizophrenic patients with psychoactive substance use had more positive psychotic symptoms than non-users. [37-38].

Table 5: Relationship between psychoactive substance use and History of Suicide Attempt

Authors	use of psychoactive substance	No use of psychoactive substance
Liraud F. et al (2000)	44,8%	57,3%
F. Elghazouani et al.(2015)	14,5%	22,5%
Dervaux A. et al (2003)	60%	24,2%
Notre etude	52.2%	28.7%

Table 6: Relationship between psychoactive substance use and age of onset of schizophrenia

Authors	use of psychoactive substance	No use of psychoactive substance
F. Elghazouani	23,2 _ 5,8	22,6 _ 5,4
Liraud et al	20+/-5,3 ans	24,1+/-7,5 ans
Dervaux et al	21.1+/-3.6 ans	25,2+/-8,3 ans
Notre étude	20,9+/- 2,1 ans	22,5 +/- 5,4ans

5. Limitations of the Study

The small size of the sample meant that the study was of low power, which did not allow a multivariate analysis.

6. Conclusion

The comorbidity between schizophrenia and drug addiction is today a real public health problem, which constantly challenges psychiatrists, on the links uniting this comorbidity and calls into question the management of such a population of patients.

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