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The prevalence and clinical features of amphetamine-induced obsessive compulsive disorder

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ABSTRACT

Background: Amphetamine abuse is increasing worldwide, and the occurrence of amphetamine-induced (AI) psychiatric issues further complicates treatment. In response, the DSM 5 has introduced the classification of amphetamine-induced obsessive–compulsive disorders (AI-OCD), though little has been published on either its prevalence rates or its clinical features. The aim of the present study was therefore to investigate the prevalence of AI-OCD, to describe patients' clinical features, and to compare the prevalence rate among such patients with those for OCD in the general population in Western countries and Iran.
Methods: A total of 547 patients with amphetamine abuse or dependency and with a positive urine test (mean age: 31.64 years; 75.5% males) took part in the study. A psychiatric interview was carried out, covering both socio-demographic and illness-related information.
Results: 18 (3.3%) patients suffered from OCD prior to amphetamine abuse, 491 (89.8%) had no OCD, and 38 (6.9%) suffered from AI-OCD. Neither socio-demographic nor illness-related dimensions predicted patients with diagnosed AI-OCD. The prevalence of AI-OCD was significantly higher than that for OCD in the general population (2.3% in Western countries, 1.8% in Iran).
Conclusions: Data suggest that prevalence rate of AI-OCD is about 7%. Neither socio-demographic nor illness-related dimensions predicted the occurrence of AI-OCD. Thus, it remains unclear why some amphetamine abusers develop AI-OCD while others do not.

1. Introduction

Amphetamine (A) and metamphetamine (MA) are medications prescribed for patients diagnosed with attention-deficit/hyperactivity disorder (ADHD), and with the aim of improving attention and concentration while reducing overactivity (Castells et al., 2011). In patients diagnosed with narcolepsy, A and MA regulate wakefulness and daytime sleepiness (Ng and O'Brien, 2009). However, as side effects and when abused, A and MA may lead to severe health problems including anxiety, hyperactivity, aggression, loss of appetite, tachycardia, mydriasis, hypertension, headache, sleep disturbance, palpitations, arrhythmia, paranoia, sexual dysfunction (Farnia et al., 2015b), and psychosis (Lineberry and Bostwick 2006).

As regards abuse and dependency, along with MA, amphetamine has become one of the most prevalently used drugs globally (World Drug Report, 2012). Studies have identified a 400% increase in A and MA use in Iran between 2010 and 2011 [(Mexico: 238%; Thailand: 166%; USA: 153%; China: 140%; World Drug Report, 2013)], and after opium, A and MA are the most commonly abused substances in Iran (Zarghami, 2011; Moradi et al., 2015; Farnia et al., 2015a). Accordingly, MA-induced psychosis has become the new health challenge for the country (Alam Mehrjerdi et al., 2013; Härtel-Petri et al., 2005).

Amphetamine abuse and dependency may lead to a broad variety of further psychiatric disorders such as amphetamine-induced (AI) bipolar disorders, depressive disorders, sleep disorders, anxiety disorders, and sexual dysfunction (DSM 5: 292.8X; Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM 5); American Psychiatric Association, 2013), and AI psychotic disorders

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(DSM 5: 292.9). An amphetamine-induced obsessive compulsive disorder (henceforth AI-OCD) has also been identified (DSM 5; 292.89). In this, the DSM 5 takes into account that repetitive and intrusive emotions, cognitions and behaviors (OCD) may be triggered by substance intake, and specifically by amphetamines. However, to our knowledge, nothing has yet been published on prevalence rates or the clinical features of patients diagnosed with AI-OCD. Accordingly, the aim of the present study was to assess the occurrence of AI-OCD among amphetamine abusers and dependents in Kermanshah (Iran), and to describe their clinical characteristics. A further aim was to compare the prevalence rate of AI-OCD in the present study with the 2.3% prevalence rate for OCD in the general population of Western countries (Goodman et al., 2014), and the 1.8% rate in Iran (Mohammadi et al., 2004).

2. Method

2.1. Study design and procedure

Between September, 2013 and November, 2014, patients with amphetamine-related health issues and who were referred to the Farabi Mental Hospital (a 300-bed university psychiatric hospital in Kermanshah, Iran) took part in this cross-sectional study. Eligible patients (see below) were informed about the aims of the study, the voluntary basis of participation, and the anonymous data handling. Next, written informed consent was obtained. The Review Board of the Kermanshah University of Medical Sciences (Kermanshah, Iran) approved the study, which was conducted according to the ethical standards laid down in the Declaration of Helsinki.

2.2. Sample

A total of 815 patients were screened, and 547 were enrolled in the study (67.2% of those screened); 413 (75.5%) were males, 134 (24.5%) were females; mean age: $M = 31.64$ years, SD = 8.94).

Inclusion criteria were as follows: (1) referred for treatment of any mental disorder related to amphetamine use as diagnosed by the attending psychiatrist and based on the structured clinical psychiatric interview to diagnose psychiatric disorders (SCID-I; First et al., 2002); SCID-II (First et al., 1997); (2) amphetamine abuse or dependency, as diagnosed by a trained psychiatrist. (3) Current amphetamine use as confirmed by urine test; (4) age of at least 18 years; (5) willing and able to participate in the study; (6) written informed consent.

Exclusion criteria were as follows: (1) not meeting the inclusion criteria, and specifically, (2) unable or unwilling to participate or to give written informed consent; (3) underage; (4) apart from OCD, any known primary psychiatric disorder such as mental retardation, dementia, affective disorders, anxiety disorders, personality disorders or other psychiatric disorders as diagnosed by a trained psychiatrist (SCID I and II). (5) Accidental poisoning; (6) any mental disorders due to other medical conditions or substances, (7) use of other substances, except amphetamine and nicotine (according to their psychiatric history).

2.3. Tools

2.3.1. Socio-demographic and illness-related information. The following socio-demographic data were gathered: age (in years), gender (male, female), highest level of education completed (primary, high school, diploma, academic degree), current job position (unemployed, employed, self-employed, casual worker/occasional jobs), civil status (single, married, divorced, widowed).

2.3.2. Illness-related information. The following illness-related information was collected: age of A-use onset (years), current daily dosages (gr), type of use (abuse vs. dependency), nicotine use (yes/no), number of cigarettes (if nicotine use); psychiatric comorbidity; past psychiatric history; history of OCD; symptoms of OCD (yes/no); OCD before A-abuse/dependency vs. AI-OCD. Y-BOCS scores (total score, obsession and compulsion scores; Yale-Brown Obsessive–compulsive Scale; Y-BOCS Goodman et al., 1989; see below); types of obsessions (aggressive, related to contamination, sexual, religious, related to symmetry, somatic); type of compulsion (washing, checking, repeating, counting, arranging); other A-related disorders (withdrawal, psychosis with delusion, psychosis with hallucinations, delirium, mood disorders, other anxiety disorders, sleep disorders, sexual disorders, additional disorders not otherwise specified).

2.3.3. Assessing OCD using the Yale-Brown Obsessive–compulsive Scale (Y-BOCS). The Y-BOCS (Goodman et al., 1989) experts' rating instrument was used to assess obsessive–compulsive disorders. It consists of ten items and answers are given on 5-point Likert scales ranging from 0 (lowest severity) to 4 (highest severity), with higher total scores therefore reflecting more severe OCD (Cronbach's alpha = .89).

2.4. Statistical analysis

First, descriptive statistics were collated to calculate the incidence of OCD, either as indicated in patients' psychiatric history (though not previously diagnosed), or attributable to amphetamine abuse/dependency (AI-OCD). Next, a series of ANOVAs and Chi-squared tests was performed to calculate possible differences in socio-demographic and illness-related characteristics, including Y-BOCS scores, between patients with AI-OCD, patients with OCD in their psychiatric history (pre-existing OCD), and patients without OCD. In a next step, to identify possible socio-demographic and illness-related predictors of the occurrence of AI-OCD, a binary logistic regression was calculated with AI-OCD (yes vs. no) as the dependent variable and socio-demographic and illness-related dimensions as independent variables. Last, the prevalence rates of AI-OCD and of pre-existing OCD were compared statistically by means of two one-sample *t*-tests with the prevalence rate of OCD in the general population of Western countries (2.3%; Goodman et al., 2014), and in the general population of Iran (1.8%; Mohammadi et al., 2004). The nominal level of significance was set at alpha <.05. All statistical computations were performed with SPSS® 20 (IBM Corporation, Armonk NY, USA) for Apple Mac®.

3. Results

All descriptive and inferential statistical indices are reported in Table 1.

3.1. Prevalence of amphetamine-induced OCD (AI-OCD)

The prevalence rate of AI-OCD was 6.9% ($n = 38$); the prevalence rate of pre-existing but not previously diagnosed OCD was 3.3% ($n = 18$), and the rate for no OCD was 89.8% ($n = 491$).

3.2. Socio-demographic dimensions between patients with pre-existing OCD, AI-OCD, and no OCD

As indicated in Table 1, no descriptive or statistically significant differences were found between the three groups (pre-existing OCD, AI-OCD, no OCD) with respect to age, sex, education, civil status, or job status.