



Misuse of atypical antipsychotics in conjunction with alcohol and other drugs of abuse

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ABSTRACT

Non-medical use of atypical antipsychotics by substance abusers has been reported in the literature, although no detailed studies exist. Among 429 addiction treatment inpatients screened, 73 (17.0%) reported misuse of antipsychotics with alcohol, opioids, cocaine, methamphetamine and/or cannabis; 39 (9.1%) within the past year. Of past year misusers, 25 (64.1%) were interviewed. Most were male (76.0%), non-Caucasian (56.0%), and polysubstance abusers (84.0%). Quetiapine, the most abused drug (96.0%), was obtained primarily from doctors (52.0%) and family/friends (48.0%). Reasons for use included to “recover” from other substances (66.7%), “enhance” the effects of other substances (25.0%), and “experiment” (20.8%). The most frequently reported positive effect was “feeling mellow” (75.0%); negative effects were consistent with antipsychotic use (e.g., feeling thirsty, trouble concentrating). Compared to a normative sample of inpatient substance abusers, ASI composite scores were higher. Findings suggest that physicians should assess for use/misuse of atypical antipsychotics among patients with addiction.

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1. Introduction

Accounts of use of atypical antipsychotics, in combination with alcohol and other drugs, began appearing on informal user blogs and other social media outlets more than a decade ago. A series of case reports subsequently detailed abuse of atypical antipsychotics through intranasal snorting (George et al., 2013; Pierre, Shnyder, Wirshing, & Wirshing, 2004) and intravenous injection (Hussain, Waheed, & Hussain, 2005). Although evidence of physical dependence is scant, one case report described withdrawal symptoms following discontinuation of quetiapine (Yargic & Caferov, 2011). Indirect evidence of quetiapine's appeal to substance abusers may be gleaned from the fact that it has street value (\$3–8 for a 25 mg dose Tarasoff & Osti, 2007) and street names (e.g., “quell”, “Susie-Q” (Keltner & Vance, 2008; Pinta & Taylor, 2007) or “Q-ball” when used in combination with another drug such as cocaine or heroin (Waters & Joshi, 2007)).

The mechanisms underlying abuse of quetiapine (the most frequently misused atypical antipsychotic) remain unclear. Hypothesized pathways include the dopamine reward system common to all addictive substances, the “sedation theory” which suggests that quetiapine is valued because of sedative/anxiolytic properties

(Sansone & Sansone, 2010), and the antihistaminic hypothesis that postulates that histamine inhibits the reward system and the antihistaminic properties of quetiapine may have a reinforcing effect (Fischer & Boggs, 2010). However, none of the theories are able to fully explain the misuse of quetiapine, nor answer the question as to why this particular drug appears to be preferable to other atypical antipsychotics (Sansone & Sansone, 2010). The authors also hypothesize that quetiapine may have some “unique intrinsic property” that users find attractive, that the drug's appeal may lie in some specific pharmacological effect, or as an additive effect when used in combination with traditional drugs of abuse.

In a letter to the editor, McLarnon, Fulton, MacIsaac, and Barrett (2012) reported on quetiapine use among 74 opioid treatment program patients who completed face-to-face interviews as part of a larger study. Eighty percent reported prior use of quetiapine. Of these, 75% admitted to abuse/misuse to include alternate routes of administration, mixing the drug with another substance, using more than prescribed and obtaining the drug without a prescription. One in four (28%) reported using quetiapine along with another substance, most often a sedative/anxiolytic. Most clients had been prescribed quetiapine (off-label) to treat insomnia and anxiety and reported taking it for its sedative effects. Although most clients were polysubstance users, misuse of quetiapine was more common among those who also reported misusing prescription sedatives/anxiolytics.

As the literature looking at misuse of atypical antipsychotics among individuals with addiction problems is minimal, it is important

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to explore this phenomenon in a more organized way. With this in mind, the current study sought to: (1) assess the prevalence of atypical antipsychotic abuse in a diverse group of substance abusers receiving inpatient treatment; (2) characterize patients who were abusing atypical antipsychotics; (3) explore reasons for use; (4) determine the source of atypical antipsychotics; and (5) understand the potential role of provider prescribing practices in patients accessing atypical antipsychotics.

2. Materials and methods

2.1. Research design and setting

This was an IRB-approved cross sectional study. Patients admitted to a locked detoxification and rehabilitation unit of the Addiction Institute of New York (AINY) at Mt. Sinai Roosevelt Hospital in New York City between January and November 2013 were verbally consented and screened for past-year use of atypical antipsychotics. The unit chief provided a list of all new admissions to the researchers several times per week and the two lead authors then attempted to screen all available and willing patients. A total of 429 patients were screened, of whom 25 were deemed eligible for and agreed to complete the Addiction Severity Index (“ASI-lite”), as well as a 45–60 minute structured clinical interview (atypical antipsychotic abuse experiences) designed for this study. All of the patients who were interviewed completed written informed consent. No participant compensation was provided.

2.2. Participants

Inclusion criteria for the study consisted of the following: (1) English-speaking; (2) ≥ 18 years old; (3) current problem with alcohol, cocaine/crack, methamphetamine, cannabis and/or opiates; and (4) misuse of atypical antipsychotics within the past 12 months; misuse was defined as use without a prescription or with a prescription but not as prescribed (e.g., wrong dose, wrong indication).

2.3. Measures

The measures used were the Brief Screen for Atypical Antipsychotic Use, Addiction Severity Index Lite (ASI-Lite) and the Atypical Antipsychotic Abuse Experiences ([AAAE]; Murray, Tioleco, Malekshahi, & Haller, 2013), a structured interview was developed for this study as no standardized interview was available. The Brief Screen assessed: (1) past 12 month substance use; (2) past 12 month atypical antipsychotic use; (3) reasons for atypical antipsychotic use; and (4) presence of a psychotic disorder. The ASI (McLellan, Cacciola, & Zanis, 1997) assesses problem severity in 7 areas impacted by substance abuse to include: (1) medical; (2) employment; (3) legal; (4) alcohol; (5) drugs; (6) family/social; and (7) psychiatric. Composite scores can be generated from ASI data and used for normative comparisons to nationally representative samples. The AAEE interview is a structured set of questions pertaining to history of use of seven atypical antipsychotic medications, alone or in combination with alcohol, cocaine, marijuana, methamphetamine and/or opioids. The domains covered in the questionnaire included: (1) age at first use; (2) duration of use; (3) frequency of use; (4) dose; (5) route of administration; (6) source of drug; (7) preference for different atypical antipsychotics (if more than one atypical antipsychotic used); (8) combinations of atypical and traditional drugs of abuse tried; (9) temporal relationship in use of atypical and traditional drugs of abuse (i.e., before, during or after); (10) reasons for use (i.e., euphoria, “come down”); and (11) side effects. If the atypical antipsychotic was prescribed, patients also were asked (12) for what psychiatric condition and if the participant had that problem; and (13) perceived likelihood of becoming “addicted” to the atypical antipsychotic.

2.4. Analysis

Descriptive statistics (i.e., means, standard deviation, and percentages) were utilized to provide summary characteristics of the sample and their drug use patterns. Composite scores were calculated for the seven sections of the ASI. Composite scores were composed of the sum of key questions within each section including number of days experiencing problems, how troubled patients were by these problems, and how important treatment was, which were weighted equally (McGahan, Jeffrey, Griffith, Parente, & McLellan, 1986). Six individuals were excluded from the family composite score as they did not have complete information. All analyses were conducted using SPSS 21 (IBM Corp, 2012).

3. Results

3.1. Recruitment

A total of 429 patients were screened. Of these, 73 (17.0%) reported abusing atypical antipsychotic medication, with 39 (9.1%) reporting use within the last 12 months. These 39 were deemed eligible and 25 (64.1%) enrolled in the study and completed the clinical interviews. Reasons that eligible patients did not enroll in the study included too little time to complete the interview prior to discharge and refusal to participate due to lack of financial compensation. Among the screening sample ($N = 429$) who obtained atypical antipsychotics from a medical provider, use was mostly “off label” to treat insomnia, anxiety, mood, and behavioral symptoms. Only 7.0% of screened patients were prescribed atypical antipsychotics for psychotic symptoms.

3.2. Characteristics of enrolled sample

Table 1 shows demographic and clinical characteristics of the sample. Three-quarters of participants (76.0%) were male. The majority of the sample identified as non-White (44.0% Caucasian, 32.0% Hispanic, and 20.0% Black/African American). Their mean age was 41.2 ($SD = 9.6$). Only 20.0% were employed (either full time or part time). Half (52.0%) reported co-morbid chronic medical problems and more than a quarter of the sample (28.0%) were receiving a pension for a physical disability, a reflection of the high percentage of co-morbid medical problems. Based on the ASI, 64.0% of patients reported having depression and 68.0% anxiety; 48.0% had a previous suicide attempt. However, only 8.0% reported a history of hallucinations which might indicate a psychotic process but which also could be drug-induced. Twelve percent (12.0%) of patients received a pension for psychiatric problems.

As shown in Table 2 the vast majority of participants (84.0%) were polysubstance abusers (both current and lifetime) with 84.0% reporting a history of IV drug use. In the last 30 days, 76.0% had used alcohol, 56.0% cocaine, 28.0% opiates, 20.0% cannabis, and 12.0% amphetamines. The average lifetime duration of regular substance use (i.e., ≥ 3 times per week, binge behavior, or problematic irregular use) was 13.3 years ($SD = 12.5$) for alcohol, 10.0 years ($SD = 9.0$) for heroin, 9.0 years ($SD = 9.8$) for cocaine, 8.7 years ($SD = 10.0$) for cannabis, and 0.5 years ($SD = 1.6$) for amphetamines. The mean number of lifetime treatment episodes was 5.9 ($SD = 5.7$) for alcohol and 5.8 ($SD = 5.2$) for drugs.

Table 3 shows the reasons for atypical antipsychotic abuse, preferred antipsychotic/drug and alcohol combinations, source of antipsychotics, and perceived likelihood of antipsychotic addiction. The most common preferred drugs to use with atypical antipsychotics were opioids (34.8%), cocaine (30.4%), and alcohol (21.7%). The most common specific atypical antipsychotic/drug combinations were quetiapine with alcohol and opioids (24.0%), quetiapine with cocaine (24.0%) and quetiapine with opioids (16.0%). Patients reported they

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