Drug and Alcohol Dependence 133 (2013) 535–540

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Attitude and risk of substance use in adolescents diagnosed with Asperger syndrome

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ARTICLE INFO

Article history:
Received 13 November 2012
Received in revised form 16 July 2013
Accepted 19 July 2013
Available online 17 August 2013

Keywords:
Substance use
Personality
Autism
Asperger
Adolescents

ABSTRACT

Background: Adolescence is a stage of development with increased risk of drug use. Individual personality traits are among those factors that influence the onset of substance use in adolescence and its psychiatric comorbidity. Little research has been done on the comorbidity between substance abuse risk and Asperger syndrome, and none specifically in adolescence. The objective of this study is to assess the risk of drug use by adolescents with Asperger syndrome and compare it with that risk in control subjects. A secondary objective was to analyze the personality factors that may be associated with substance use in the same two groups.
Methods: We used three self-administered questionnaires, one for drug risk assessment (FRIDA) and the other two for personality trait assessment (MACI and SSS-V).
Results: Adolescents diagnosed with Asperger syndrome are at less risk for drug use derived from family and access to drugs factors. Subjects with Asperger syndrome did score higher on introversive, inhibited, doleful, and borderline tendency prototypes than healthy controls, and scored lower on all sensation-seeking traits. Being male, a diagnosis of Asperger syndrome, and unruly, introversive, and sensation-seeking traits were all independently associated with the risk of drug abuse.
Conclusions: Both identified personality factors and other variables associated with the Asperger syndrome contribute to the low risk of drug abuse observed in this population. Exploring protective factors for drug use in these subjects may prove useful for interventions with adolescents at risk for consumption.

1. Introduction

Adolescence is a stage of development with increased risk of onset of drug use (Sussman et al., 2004; Luengo et al., 1990). In the last few decades, there has been a major social change in relation to drug use among young people, involving both the use of new drugs and the emergence of new consumption patterns associated with leisure activities, formerly considered activities of marginal groups (Muñoz and Fatjó-Vilas, 2009). For these reasons, the perception of risk associated with drug use has declined significantly, especially among young people.

According to the literature, juvenile drug use corresponds to a multi-determined behavior pattern. Several factors, including genetic vulnerability, individual personality traits, and family and social factors seem to influence the onset of substance use in adolescence and its psychiatric comorbidity (López Larrosa, 2010; Swadi, 1999; Espada et al., 2008; Meyers, 2010). Precocity of substance use is considered one of the main predictors of abuse in adolescence (González et al., 1996; Grant et al., 2006). Generally, males start earlier and have a higher regular consumption, although this inequality gradually declines over time (García-Señorán, 1994; Kumpfer and Turner, 1991; Novacek et al., 1991). Sensation seeking, low self-esteem, rebellion and rule breaking, lack of coping strategies, zero tolerance for frustration, and impulsivity are the personality factors most consistently associated with drug use (González et al., 1996; Staiger et al., 2007). Sensation seeking is a relevant variable to distinguish adolescents who do not use drugs from those who begin to use them, not only with respect to regular use, but also to experimental use (González et al., 1996). Finally, a predisposition toward rebellion, independence, and non-compliance are factors that consistently stand out as precursors to drug use (González et al., 1996). The parenting model, over-protective maternal attitude with ineffective paternal behavior, inadequate educational practices characterized by excessive permissiveness or strictness, communication problems and stress, are related to greater drug use (Hualde, 1990). However, a series of

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http://dx.doi.org/10.1016/j.drugalcdep.2013.07.022

studies have pointed to the influence of friends as the clearest predictor of drug use in adolescents (García-Señorán, 1994; Epstein et al., 1995; Brook et al., 1989; Bailey and Hubbard, 1991; García-Pindado, 1993). Furthermore, it has been demonstrated that a teen who uses drugs is more likely to have friends that also use them than a teen who does not (Epstein et al., 1995). Drug availability is been also associated with increased substance use in recent years (Kendler et al., 2011).

Asperger syndrome (AS) is a developmental disorder with a neurobiological basis, which affects social functioning and the spectrum of activities and interests. It differs from other Pervasive Developmental Disorders by its relative preservation of linguistic and cognitive development (although atypical odd use of language is frequently reported and everyday functioning is usually impaired). In the upcoming DSM-5 Asperger syndrome will be subsumed under the umbrella of Autism Spectrum Disorder.

AS is frequently comorbid with attention deficit hyperactivity disorder, affective disorders, anxiety disorders, behavioral disorders and tic disorders (Hofvander and Delorme, 2009; Russel et al., 2005; Mattila et al., 2010; Caamaño et al., 2013). Very little research has been conducted on comorbidity between substance abuse and AS. To our knowledge, there are only two studies analyzing drug abuse that include autism spectrum disorders, none of which specifically focuses on Asperger patients. Sizoo et al. (2010) analyzed substance abuse comorbidity in adult patients with autism spectrum disorder and attention deficit hyperactivity disorder, finding a higher prevalence of drug use in patients diagnosed with attention deficit hyperactivity disorder than with autism spectrum disorder (Sizoo et al., 2010). Santosh and Mijovic (2006) conducted a retrospective study of comorbidity of various neurodevelopmental disorders with drug abuse, in adolescent population, and reported a diminished risk in autism spectrum disorder (Santosh and Mijovic, 2006). Our clinical impression from working with adolescents with AS points to a negative attitude toward drug use, which seems to fit with their rigid norm-abiding style, limited social contact, and low interest in typical social activities of adolescents such as attending parties.

Therefore, our aim was to analyze the risk of drug use in adolescents with AS compared with control subjects. A secondary objective was to analyze the personality risk factors that may be associated with substance use in the two groups. Firstly, we hypothesized that patients with AS would have a lower risk of substance use and more negative attitudes toward the use of drugs than the control group (measured by the FRIDA Scale), and secondly, that personality traits such high norm abiding, and reduced prosocial attitude would be associated with less risk of substance use in AS.

2. Methods

2.1. Study design

This is a descriptive study that explores the cross-sectional relationship between personality factors and risk of substances use in adolescents with AS compared with healthy participants.

2.2. Sample

Data were collected from a clinical sample of 26 patients diagnosed with AS (22 males and 4 females, mean age 15.15 years) and 28 healthy control subjects (18 males and 10 females, mean age 15.0 years), who met the criteria for the study.

Patients with AS were recruited through an outpatient clinic that treats autism spectrum disorder within an adolescent unit at Gregorio Marañón University General Hospital of Madrid (HGUGM), the Asperger Families Association of Madrid, and other private associations that focus on social skills intervention (Ubica). Participants in the healthy control group were recruited through the school psychologist of a high school located in the catchment area of the hospital, who knows and periodically assesses the students. He recruited consecutively from those fulfilling the appropriate age, had an IQ within the normal range based on academic achievements and had no known psychiatric or psychological problems. The groups were matched for age and gender.

The Ethics and Clinical Research Board of Gregorio Marañón University General Hospital approved the study. Prior to participation, all participants and their parents or legal guardians signed an informed consent form after receiving an explanation of study procedures.

The AS diagnosis was based on the clinical judgment of an attending child psychiatrist (MP) with research training in the ADOS and the ADI-R, and an international ADOS trainer personally took a psychiatric and developmental history, checked for compliance with DSM-IV-TR and Gillberg criteria (Gillberg and Gillberg, 1989), and reviewed all available academic and medical reports (around 40% of which included previous ADOS results and most of which included standard IQ tests). The ADOS interview (Lord et al., 2002) was conducted only when, after this diagnostic process, the diagnosis was equivocal. All participants with AS were in the mainstream educational system and lived with their families.

2.3. Inclusion and exclusion criteria

The study inclusion criteria for the AS group were: (1) 13–18 years of age, (2) AS diagnosis, (3) no other comorbid psychiatric diagnoses, and (4) informed consent signed by parents or guardians and participants older than 16, and assent if younger. The study inclusion criteria for the control group were: (1) 13–18 years of age, (2) absence of psychiatric history, (3) informed consent signed by parents or guardians and assent of the participant. Cases were recruited from patients consecutively seen at the clinic or the above-mentioned associations who agreed to participate. The only study exclusion criteria for both groups were mental retardation or other significant mental illness unrelated to AS. Participants were enrolled regardless of their history of drug use.

2.4. Procedure

2.4.1. Measuring instruments. The study consisted of completing three self-administered questionnaires, one for drug risk assessment (the Spanish FRIDA questionnaire) and the other two for personality trait assessment (MACI and SSS-V)

2.4.1.1. Interpersonal Risk Factor for Drug Use in Adolescents (FRIDA; Secades et al., 2006). The FRIDA questionnaire consists of 90 items grouped into 7 subscales or factors that assess interpersonal variables related to risk factors for drug use in adolescents. The items are answered on a Likert scale. The first factor, Family reaction (items 1–15), measures the reaction of the relatives to possible legal or illegal drug use. The second factor, Friends (items 16–27), assesses the attitudes of friends to drugs, their drug use level, and types of activities that the subject may do with them. The third factor, Access to drugs (items 28–35), assesses the subject's perception on ease of access to drugs in his or her environment. The fourth factor, Family risk (items 37–51), measures aspects of family behavior (care or abuse), family drug use, and perceptions of family conflict. The fifth factor, Family drug education (items 52–58), assesses the education received by the adolescent from his or her family on the issue of drugs. The sixth factor, Protective activities (items 59–81), measures dangerous situations, quality of relationship with family, and academic variables. The seventh factor, Educational style (items 82–90), measures the existence of family rules and how they are established. Higher scores on each subscale indicate higher risk.

2.4.1.2. Millon Adolescent Clinical Inventory (MACI; Millon, 2004). Based on Millon's personality model, this instrument applies to subjects 13–19 years of age, and is comprised of 160 items and 31 scales: twelve Personality Patterns scales (from the DSM-IV Axis II); eight Expressed Concerns scales; seven Clinical Syndromes scales; three Modifying Indices, and a Validity scale.

We decided to focus only on the twelve Personality Patterns scales (Introversive, Inhibited, Doleful, Submissive, Dramatizing, Egotistic, Unruly, Forceful, Conforming, Oppositional, Self-Demeaning, and Borderline Tendency). The Expressed Concerns and the Clinical Syndromes scales include aspects that go beyond the objectives of our study, focusing on more specific pathological aspects, while our work focuses more on a review of general non-clinical aspects of personality that may be related to substance use.

2.4.1.3. Sensation Seeking Scale Form V (SSS-V; Zuckerman et al., 1978). The SSS-V is a self-administered questionnaire comprising 40 questions with dichotomous responses (true-false). Its aim is to assess sensation seeking personality traits. It is made up of four 10-question subscales (Zuckerman et al., 1978). The four subscales that comprise the SSS-V are: Thrill and Adventure Seeking, Experience Seeking, Disinhibition (defined as a lack of self-restraint) and Boredom Susceptibility. The scale provides one score per subscale and a global index, with higher scores representing greater presence of the trait. It is used in subjects 16 years of age and older.

Since our study includes subjects 13 years of age and older, we also used the Sensation-Seeking Scale (SSS-V) Spanish Version (EBS-J; Pérez et al., 1987), which is the Spanish adaptation of the Zuckerman Sensation-Seeking Scale and can be used in subjects up to 15 years of age.