

Stimulant-Induced Psychosis: Importance of Patient Education and Compliance

To the Editor: Psychosis is a known side effect of high-dose methylphenidate, although it has not been studied in detail.¹ Proper patient and parental education is critical to prevent psychosis, yet this side effect has not been the focus of interest in most cases.

Case report. We report the case of a 17-year-old white male seen for the first time by a psychiatrist. The patient complained of difficulty focusing and concentrating. After a thorough psychological evaluation, he was diagnosed with Axis I attention-deficit disorder (ADHD) inattentive type according to the *DSM-IV-TR* and was started on oral methylphenidate 20 mg/d in the morning. He returned for his follow-up appointment 3 weeks after starting therapy. He was noted by the treating psychiatrist to appear suspicious of the staff and the doctor. Additionally, the patient complained of visual hallucinations. His family reported that he took more than the prescribed dose, about 90 mg/d in the morning, as he thought it would “help him get more focused.” They also stated that the patient was talking to himself.

The decision to discontinue methylphenidate treatment was made. The patient was evaluated again 2 weeks later, and his psychotic symptoms were found to have abated. He reported no visual hallucinations, the family reported that he had ceased conversing with himself, and the treating psychiatrist noted that his suspicious behavior had disappeared. The diagnosis of methylphenidate-induced psychosis was made.

Amphetamine therapy is the mainstay treatment of ADHD.² While atomoxetine is a US Food and Drug–approved alternative to amphetamine therapy, it is considered less effective than amphetamine.³ Amphetamine treatment is associated with serious side effects such as psychosis.⁴

High-dose amphetamine-induced psychosis is typically characterized by visual hallucinations, often of insects crawling on the skin, delusions, and suspicious behavior.^{4–6} Typically, more than 60 mg is required to produce these effects, although some individuals can tolerate higher doses. Practitioners should recognize amphetamine-induced psychosis, because although it can have a dramatic presentation, it can be treated by simply withdrawing the offending agent.

This clinical vignette highlights many important aspects pertaining to ADHD treatment. It is estimated that 8% to 10% of the US population suffers from ADHD.³ In the case of minors, the patient and parents should be counseled by the physician for proper compliance to dosage and immediate reporting of any side effects. Adequate parental supervision of minors while they are taking methylphenidate should also be stressed during the counseling. Attempts should be made to have both parents present at the time of counseling, as this will ensure that if either parent

forgets part of the information rendered in the counseling session, the other parent will be there to reinstate it. Moreover, to increase compliance, written directions should be given to both the patient and the parents. The first dose of the medication should be given on the morning of a weekend, for example, on a Saturday morning, so that the parents can be present to monitor the dose and observe any immediate side effects of the treatment. In this case report, the parents, as well as their son, lacked knowledge and education regarding the importance of compliance. Neither parent asked the son if he was experiencing any side effects while taking the medication, nor did the patient confide in his parents.

Amphetamine-induced psychosis is a unique syndrome seen in patients on amphetamine therapy, typically consisting of visual hallucinations, delusions, and suspicious behavior. It is important for clinicians to recognize this syndrome when it presents because treatment withdrawal results in complete reversal of the symptoms. The patient and family should be counseled about ADHD, its possible treatments, and immediate reporting of any side effects. Minors should have parental supervision when taking medication such as methylphenidate, as it can have serious side effects. Patient follow-up should be scheduled soon after initiation of treatment to minimize the undesirable effects of such drugs.

REFERENCES

1. Kraemer M, Uekermann J, Wiltfang J, et al. Methylphenidate-induced psychosis in adult attention-deficit/hyperactivity disorder: report of 3 new cases and review of the literature. *Clin Neuropharmacol*. 2010;33(4):204–206.
2. Fusar-Poli P, Rubia K, Rossi G, et al. Striatal dopamine transporter alterations in ADHD: pathophysiology or adaptation to psychostimulants? a meta-analysis. *Am J Psychiatry*. 2012;169(3):264–272.
3. Pliszka S; AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry*. 2007;46(7):894–921.
4. Ellinwood EH Jr. Amphetamine psychosis, description of the individuals and the process. *J Nerv Ment Dis*. 1967;144(4):273–283.
5. Angrist B, Gershon S. The phenomenology of experimentally induced amphetamine psychosis: preliminary observations. *Biol Psychiatry*. 1970;47:95–107.
6. McEvoy GK, ed. *American Hospital Formulary Service Drug Information*. Bethesda, MD: American Society of Health-Systems Pharmacists; 1999:2038–2040.

Aisha Rafiq, MBBS
 emanali786@gmail.com
Asim Shah, MD

Author affiliations: Department of Epidemiology, University of Texas Health Science Center (Dr Rafiq); and Department of Psychiatry, Baylor College of Medicine (Dr Shah), Houston, Texas.

Potential conflicts of interest: None reported.

Funding/support: None reported.

Published online: November 7, 2013.

Prim Care Companion CNS Disord 2013;15(6):doi:10.4088/PCC.13101542

© Copyright 2013 Physicians Postgraduate Press, Inc.