Irish Journal of Psychological Medicine 1994 September; 11 (3): 132-133

BRIEF REPORTS

Psychiatric sequelae of MDMA (ecstasy) and related drugs

***Geraldine Cassidy,** MRCPsych, Senior Registrar in Psychiatry, St. Margaret's Hospital, Great Barr, Birmingham, B43 7EZ, England. **Clive G Ballard,** MRCPsych, Lecturer in Psychiatry, University of Birmingham, Queen Elizabeth Psychiatric Hospital, Mindelsohn Way, Birmingham, B15 2QZ, England.

***Correspondence**

Abstract
Two cases of psychiatric disorder temporally related to the abuse of hallucinogenic amphetamines 3, 4 methylenedioxymethamphetamine (MDMA), methylenedioxyamphetamine (MDA) and methylenedioxyethylamphetamine (MDEA) are described, suggesting that a variety of psychiatric morbidity may be precipitated by abuse of these drugs, including paranoid psychosis, mixed affective psychosis and symptoms of obsessive compulsive disorder.

Keywords: Hallucinogenic amphetamines; (MDMA, MDA, MDEA) Substance abuse; Designer drugs; Drug induced psychosis; Affective psychosis; Obsessive compulsive disorder.

Introduction
Ecstasy (3, 4 methylene dioxy methamphetamine) – MDMA is a drug of abuse with potent serotoninergic and dopaminergic properties which may account for its stimulant and hallucinatory effects. The prevalence of MDMA abuse in the U.K. is largely unknown. Morrison and Plant *(1)* in their comprehensive study of drug abuse in Scotland found no cases of MDMA abuse among 115 multi-drug abusing addicts. The recent literature has reported numerous case associations of MDMA with psychiatric disorder and fatality which would indirectly suggest an increase in the prevalence of MDMA abuse *(2 – 6)*. To date the literature pertaining to the psychiatric consequences of MDMA abuse has largely been concerned with psychosis. We report two cases of psychiatric disorders which were closely correlated in time with MDMA abuse. The purity of samples of the drug seized by police internationally has been variable, with some authors reporting high levels of MDMA *(7)* and others finding high levels of related compounds e.g. methylenedioxyamphetamine (MDA) *(8)*. Locally the regional forensic laboratory has found in some instances contamination with MDA and methylenedioxyethylamphetamine (MDEA) while other samples have been relatively pure. Therefore, although 'Ecstasy' abuse was reported by subjects the compounds ingested may have contained related substances.

Case 1
PH, a 21 year old man was referred to the local psychiatric services with a two days' history of bizarre behaviour when he had experienced rapid mood changes fluctuating from elation to depression. During the depressive phases, he had tried to cut his wrists believing his head would explode because of his guilt. These fluctuations occurred over 5 to 10 minute periods and were persistent for about two days prior to his admission. Also, he had not eaten or slept for two days. At the time of admission he was overactive, expressed grandiose delusions that he was Jesus Christ and claimed he had special powers. There was no previous family or personal psychiatric history.

He had been abusing Ecstasy on a regular basis once or twice a week for six months and had taken two tablets which would equate to a dose of 200mg approximately 12 hours before the onset of mood disturbance. For six months prior to the index admission he had also regularly smoked cannabis, approximately one quarter of an ounce per month, without any untoward effects. Following admission he was treated with oral chlorpromazine which had an initial sedating effect but had no effect on his mood fluctuations or the mood congruent delusions. His affective symptoms gradually improved over three weeks and he was discharged from in patient care in an euthymic state. Although the symptoms fulfiled DSM-III-R criteria for bipolar disorder-mixed, in view of the close correlation with hallucinogenic amphetamine abuse a diagnosis of hallucinogen mood disorder was made.

Case 2
HR, a 17 year old man was referred to the local Regional Psychotherapy Service because of obsessional symptoms and rituals which he performed 14 to 15 times in a day to prevent any harm to his family. These included touching a lamp post repeatedly, dancing a "jig" in a particular way on the pavement, and attempts to resist performing them were associated with an increase in subjective anxiety. The obsessional symptoms had commenced three weeks prior to the referral in the wake of a paranoid psychosis which began six months prior to the referral when he had developed a number of delusions of reference and believed that people were following him on the street to kill him. He also had delusions of jealousy believing that his girlfriend was unfaithful to him. Although the delusional beliefs had gradually waned over the six month period he had remained secluded in his flat for a considerable length of time following the onset of these symptoms.

His disorder met DSM-III-R criteria for hallucinogenic delusional disorder. He had been abusing Ecstasy two to three times per week for 4 to 5 months before the onset of the psychosis and had continued to abuse Ecstasy until 3 months into the illness when he felt there was a close relationship between his improvement and the cessation of Ecstasy abuse. However, he had abused cannabis during this period at a dose of approximately one eighth of an ounce per week without any untoward effects and denied other illicit drug use or excessive consumption of alcohol. He had

no personal or family history of psychiatric disorder.

Discussion

The patient in Case 2 described above had stopped his abuse of hallucinogenic amphetamines prior to the referral hence it was not possible to perform urine testing and the abuse of the patient in Case 1 was not verified because of the limited availability of local testing facilities. However, all subjects were consistent in their history and had volunteered detailed information about their hallucinogenic amphetamine abuse.

The psychosis experienced by the patient in case report 2 is similar to episodes of psychosis described in the literature consisting of a number of paranoid delusions without first rank symptoms in a disorder of lengthy duration. Furthermore, in the present case obsessional symptoms were also prominent. This may represent a specific obsessional effect of hallucinogenic amphetamines in view of the association between the serotonergic system and obsessive compulsive disorders *(9)* and the potent serotonergic effects of hallucinogenic amphetamines (MDMA, MDA) *(10)*. The patient in case 1 presented with a mixed affective disorder closely related in time to ingestion of hallucinogenic amphetamines. Descriptions of hypomanic disorders following stimulant abuse are well documented *(11)* and it is likely that such an affective disorder was precipitated in this patient.

The patient described reported recreational use of cannabis. While there is little evidence to support a separate diagnosis of cannabis psychosis, the drug can produce transient psychotic symptoms and an acute toxic psychosis, which is usually shortlived *(12, 13)*. In the cases presented here the psychotic symptoms were persistent and it is possible that the use of cannabis augmented the propensity of MDMA to cause psychosis. It is likely that people who abuse illicit substances are more likely to come to the attention of psychiatric services when they have severe psychotic symptoms and this may explain reports of greater occurrence of severe psychotic symptoms rather than mild disturbances.

The two cases reported here add to the evidence linking the abuse of MDMA and related hallucinogenic amphetamines to the precipitation of psychotic disorder. In addition, the obsessional symptoms reported by Case 1 may have been related to use of hallucinogenic amphetamines possibly medicated through the serotonergic system, although if so it is surprising that such an association has not been reported previously. Further research is warranted to clarify these issues.

Acknowledgments

We thank Professor Digby Tantam and Dr. VHR Krishman for their help during the preparation of the manuscript.

References

1. Morrison V, Plant M. Drug problems and pattern of service use amongst illicit drug users in Edinburgh. Br J Addict 1990; 85: 547-54.
2. McGuire P, Fahy T. Chronic paranoid psychosis after mis-use of MDMA ("Ecstasy"). BMJ 1991; 302: 697.
3. Schifano F. Chronic atypical psychosis associated with MDMA ("Ecstasy") abuse. Lancet 1991; 338: 1335.
4. Benazzi F, Mazzoli M. Psychiatric illness associated with "Ecstasy". Lancet 1991; 338: 1520.
5. McGuire P, Fahy T. Flashback following MDMA. BMJ 1992; 160: 276.
6. Henry JA, Jeffreys KJ, Dawling A. Toxicity and deaths from 3, 4 Methylenedioxymethamphetamine ("Ecstasy"). Lancet 1992; 340: 8816: 384-7.
7. Leser D. The Ecstasy Invasion. The Australian Magazine. The Australian 1989; 30-6.
8. Renfroe CL. MDMA on the street, analysis anonymous. J Psychoactive Drugs 1986; 18: 363-9.
9. Charney DS, Goodman WK, Price LH, Woods SW, Rasmussen SA, Henninger GR. Serotonin function in obsessive compulsive disorder. Arch Gen Psychiatry 1988; 45: 177-88.
10. Ricaurte GA, DeLanney LE, Irwin I, Langston JW. Toxic effects of MDMA on central serotonergic neurones in the primate; importance of route and frequency of drug administration. Brain Research 1988; 446: 165-8.
11. Norvenius G, Wildorlov E, Lonerholm G. Phenylpropylamine and mental disorder. Lancet 1979; ii: 1367-9.
12. Thornicroft G. Cannabis and Psychosis, is there epidemiological evidence for an association? Br J Psychiatry 1990; 157: 25-33.
13. Tart C. Marijuana intoxication; common experiences. Nature 1970; 226: 701-4.

Original manuscript received 20th October, 1993. Final revision accepted 16th May, 1994.

Irish Journal of Psychological Medicine 1994 September; 11 (3): 133-134

Opiate dependence in acute intermittent porphyria

Elizabeth A Procter, MBChB, Registrar in Psychiatry, ***Immanuel P McKenzie,** MBChB, MRCPsych, Registrar in Psychiatry, The Harrogate Child, Adolescent and Family Service, Dragon Parade Clinic, 2 Dragon Parade, Harrogate, HG1 2BY, England.

***Correspondence**

Abstract

Acute Intermittent Porphyria (AIP) is often accompanied by psychiatric disturbance. Despite routine use of opiate analgesia in the treatment of the acute illness, only one case of dependence is described in the literature. We report a further case where dependence on morphine complicated the assessment and management of a woman with AIP who had been admitted to psychiatric hospital following the death of her child. Clinical implications are discussed.

Keywords: Porphyria; Morphine; Narcotic dependence.

Introduction

The Porphyrias are a group of rare hereditary diseases involving disturbance of haem synthesis. Acute Intermittent Porphyria (AIP) is the commonest type in Britain and world-wide estimates of prevalence range from 1:100,000 to 8:100,000 *(1, 2)*. Psychiatric manifestations occur frequently during acute attacks but there are conflicting views as to whether they may be present during remission *(3-5)*. Symptoms described include: depression, vague neurotic complaints, hysteria, acute anxiety, hallucinations delirium *(5, 6)* and schizophreniform psychosis *(3)*. During acute attacks it is common medical practice to prescribe large doses of narcotic analgesics, but there is only one case report of opiate dependence *(7)*. We describe a further case of a woman with AIP who was admitted to a psychiatric hospital with symptoms of depression, where dependence on opiates was important.

Case Report

A 30 year-old woman was admitted informally to a general psychiatric hospital, with a two month history of depressed mood, irritability, sleep disturbance, poor appetite, loss of enjoyment and suicidal ideation. Two months prior to her