

Remission of Methamphetamine-Induced Withdrawal Delirium and Craving After Electroconvulsive Therapy

Jamshid Ahmadi,^{1,*} Sara Ekramzadeh,¹ and Saxby Pridmore²

¹Substance Abuse Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran

²University of Tasmania, Tasmania, Australia

*Corresponding author: Jamshid Ahmadi, Substance Abuse Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel/Fax: +98-7136279319, E-mail: jamshid_ahmadi@yahoo.com

Received 2015 March 25; Accepted 2015 October 10.

Abstract

Introduction: The aim of this study is to describe the use of electroconvulsive therapy (ECT) in the treatment of methamphetamine-induced withdrawal delirium and craving in a single case.

Case Presentation: A 44-year-old male presented to the hospital in Fars province, Iran, with Methamphetamine-Induced Withdrawal Delirium who responded to ECT.

Conclusions: The electroconvulsive therapy can be a suitable option for the treatment of methamphetamine withdrawal delirium and craving. Also, it can be usefully employed in these very serious conditions which may represent a risk to life.

Keywords: Methamphetamine Induced Withdrawal, Delirium, ECT

1. Introduction

We describe a patient with methamphetamine-induced delirium and craving which responded to electroconvulsive therapy (ECT).

Methamphetamine abuse was a minor problem in Iran (1, 2) until the last couple of years. Recently, there has been a marked increase in the use of methamphetamine, especially among the young, with an increase in methamphetamine related psychiatric presentations to hospitals.

Formerly, methamphetamine was illegally smuggled in from the abroad, but it is now synthesized in Iran in 'underground' laboratories. The methamphetamine synthesized in Iran is of higher potency and is commonly associated with psychosis. A single consumption has been associated with persecutory delusions and auditory and visual hallucinations.

2. Case Presentation

A 44-year-old male employee presented to the hospital in Fars Province, Iran, with decreased level of consciousness. The patient had no personal or family history of medical problems, and no history of head trauma.

The patient began occasional smoking of opium 14 years prior to admission, which increased to daily smoking for the decade leading up to admission. He had a distant history of occasional use of alcohol; however, he stopped using it eight years prior to admission.

Moreover, the patient had smoked heroine for six years

prior to admission; however, there was no history of cannabis or cocaine use in the past.

Eight months prior to admission, the patient commenced smoking methamphetamine, twice weekly, which then increased to daily use in the two months leading up to admission. From the time he commenced daily smoking of methamphetamine, the patient developed persecutory delusions, believing he was being followed by an agent from. He also experienced persecutory delusions regarding his neighbors and had a visual hallucination of a man on his roof. He had a poor appetite and severe insomnia.

In short, when he was brought to hospital by his wife, he had been smoking heroine for six years and methamphetamine daily for two months. Physical and neurological examinations were normal. Serology for HIV and hepatitis were negative. Drug screening was positive for methamphetamine and morphine (consistent with opium and heroin use) and negative for cannabis, ecstasy, methadone, buprenorphine, benzodiazepine and alcohol.

The patient had taken methamphetamine on the morning of admission. By that evening his level of consciousness was reduced and he was drowsy. He was given buprenorphine 2 mg sublingually twice daily, to reduce opioid withdrawal, and closely monitored. On the second day of admission his drowsiness had increased and it was difficult to arouse him to answer questions.

He became disoriented in time and place. On the third day, his condition was further deteriorated and could not speak or take food.

On the fourth day of admission, the patient was considered to be in mortal danger and he was given emergency ECT using a Thymatron TM (System IV, Company IND, USA). The electrodes were applied bilaterally, he was administered two seizures during the same anesthetic multiple monitored ECT. Fourteen hours later he was alert and orientated, although still with some psychotic thinking and hallucinations. There was no change on the fifth day.

On the sixth day, multiple monitored ECT, as described was repeated. Five hours later the patient was alert and orientated in time, place and person, and free of psychotic features.

Single ECT was administered on 9th, 11th and 13th days and he was discharged on the 14th day. He received further single ECT on the 16th and 18th days (as an out-patient) and remained well.

Within a week or so, however, he again began to smoke amphetamine and was soon psychotic as before, with hallucinations and delusions. Multiple monitored ECT was again administered, and some hours later, he showed partial improvement. He was administered double ECT on two further occasions over the next 5 days and was discharged free of psychiatric symptoms.

The patient was followed-up and consumed buprenorphine for 6 months. He denied any further methamphetamine use and his mental state remained unremarkable.

3. Discussion

This case illustrates that ECT may be beneficial in treat-

ing methamphetamine-induced psychosis and methamphetamine withdrawal delirium. Its use in these conditions have been reported previously (3, 4). However, a systematic prospective trial of ECT in delirium is yet to be published, and this report is an important addition to the literature. It is of interest that MMECT continues to be used with good effect in leading centers in Iran.

Authors' Contributions

Jamshid Ahmadi designed the study, collect the data, and wrote the draft; Sara Ekramzadeh and Saxby Pridmore analyzed the data and revised the manuscript; all the authors read and approved the final manuscript.

Conflict of Interest

None declared.

Funding/Support

This paper received no financial support and there are no conflicts of interest.

References

1. Ahmadi J. The Effect of Buprenorphine and Bupropion in the Treatment of Methamphetamine Dependency and Craving. *Br J Med & Med Res.* 2015; **10**(2):1-4. doi: 10.9734/BJMMR/2015/19334.
2. Ahmadi J, Sahraian A, Dastgheib SA, Mowla A, Ahmadzadeh L. Management of Methamphetamine-Induced Psychosis by 8 sessions of ECT Sch. *J App Med Sci.* 2015; **3** (3H):1565-6.
3. Ahmadi J, Pridmore S, Ekramzadeh S. Successful Use Of Electro Convulsive Therapy In The Management Of Methamphetamine Induced Psychosis With Onset During Intoxication. *J Addict & Depend.* 2015; **1**(1):1-2.
4. Kramp P, Bolwig TG. Electroconvulsive therapy in acute delirious states. *Compr Psychiatry.* 1981; **22**(4):368-71. [PubMed: 7261577]