

Case Study**Comparison of Buprenorphine and Bupropion in the treatment of Methamphetamine dependency and Craving****Abstract**

Background: Methamphetamine dependency and abuse is a growing problem in the world.

Objective: To compare efficacy of buprenorphine and bupropion in the treatment of methamphetamine craving.

Results/Conclusion: Buprenorphine is more effective than bupropion in the treatment of methamphetamine craving.

Introduction

We describe a patient with methamphetamine dependency and craving who responded better to buprenorphine than bupropion.

Although mental disorders especially addictions have been a problem in the world including Iran, however, methamphetamine abuse was a minor problem in Iran until the last couple of years (1-12). Recently, there has been increased usage, especially among the young, with an increase in methamphetamine related psychiatric presentations to hospitals.

Formerly, methamphetamine was illegally smuggled in from the west, 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 episode of use has been associated with persecutory delusions and auditory and visual hallucinations.

Case Presentation

27 AR was a single, 22 year old graduate in higher diploma and self-employed. He lived in
28 Shiraz city of Fars province in south Iran with his parent. There was no personal or family
29 history of medical problems, and no history of head trauma.

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31 AR began daily smoking of methamphetamine and heroin 5 years ago -after his father death.

32 There was no history of cannabis or cocaine use in the past.

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34 In short, when he was brought to hospital by his relatives, AR had been smoking
35 methamphetamine and heroin daily for 5 years prior to admission (October 28, 2014). Physical
36 and neurological examinations were normal. Serology for HIV and hepatitis were normal. Drug
37 screening was positive for methamphetamine and morphine (consistent with methamphetamine
38 and heroin use).

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40 AR was given buprenorphine 4 mg sublingually twice daily, to reduce methamphetamine
41 withdrawal and craving for 2 weeks. He was closely monitored by every day interview
42 asking craving of methamphetamine ranging from 0 (minimum) to 10 (maximum). The
43 craving scores for the 14 days of admission were: 7, 7, 6, 5, 4, 4, 2, 1, 0, 0, 0, 0, 0, 0,
44 respectively (Mean = 2.57).

45 AR was discharged after 2 weeks.

46

47 AR was taking buprenorphine 4 mg sublingually every day and was in good condition.

48

49 After several weeks, he stopped taking buprenorphine and developed methamphetamine
50 craving. Few weeks before second admission (February 3, 2015), AR again began to smoke
51 methamphetamine.

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53 In second admission, AR was given bupropion 150 mg orally twice daily, to reduce
54 methamphetamine withdrawal and craving for 2 weeks. He was closely monitored by every
55 day interview asking about craving of methamphetamine ranging from 0 (minimum) to 10
56 (maximum).

57
58 The craving scores for the 14 days of admission were: 8, 7, 7, 5, 6, 5, 5, 6, 4, 5, 4, 4, 5, 7,
59 respectively (Mean = 5.57).

60 AR was discharged after 2 weeks.

61

62 **Discussion**

63 This case illustrates although both buprenorphine and bupropion could be beneficial in
64 treating methamphetamine dependency and withdrawal craving, however, buprenorphine is
65 much more effective than bupropion.

66 To our knowledge, buprenorphine use in these conditions have not been reported previously,
67 and this report is an important addition to the literature. It is of interest that buprenorphine
68 continues to be used with good effect in leading centers in Iran.

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