CASE REPORT

Mephentermine Dependence: An Emerging Challenge

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Introduction

Structurally similar to methamphetamine, mephentermine has been used as a vasoconstrictor for treating hypotension in acute, emergency or anaesthesia settings [1], or as a nasal decongestant in inhalers [2]. It has been prohibited by the World Anti-Doping Agency, because as a stimulant it can improve physical performance [3]. Banned in the United States, it is available in many countries illegally or legally, and mainly for veterinary use [4].

Our literature search on mephentermine abuse or dependence produced only six case reports. The first two from the United States report acute psychotic symptoms with misuse of inhalers [2, 5]. The next three reports from India describe chronic psychosis with mephentermine dependence [6], codependence of intravenous mephentermine, buprenorphine and promethazine [7], and mephentermine dependence with doses of 60 mg/day [8]. A recent report from Brazil describes mephentermine dependence with daily doses of 120–180 mg routinely, and 420 mg on a single occasion [9].

We present a case of mephentermine dependence who reported using an extremely high dose of 1500 mg/day for 6 months.

Case Report

A man aged 26 (unmarried, only child, living with his parents) presented to the Drug De-addiction and Treatment Centre at

the Post Graduate Institute of Medical Education and Research, Chandigarh, India in late 2011. He reported occasional use of tobacco, cannabis, and alcohol in high school, followed by dextropropoxyphene 65 mg capsules in 2003. By 2005, depending on the availability, he was using upto 15 capsules daily, and opium, poppy husk, codeine containing cough syrups or diphenoxylate tablets as substitutes. Dose reduction resulted in withdrawal features like lacrimation, rhinorrhoea, body aches, and intense craving. For lack of interest, he discontinued studies, and loafed around or did a few petty jobs. He lost all such jobs within a month due to intoxication at work.

In 2009, when his father became aware of his opioid dependence and threatened stopping his pocket money, he quit opioids. For his opioid withdrawal a local chemist recommended mephentermine, highlighting its performance enhancing use by sportsmen. The first intravenous dose of 30 mg made him feel energetic and stimulated. Two days later a double dose made him feel even better. Thereafter, he continued self-injecting 60–90 mg 2–3 times weekly, while abstaining from opioids. He found mephentermine preferable over opioids as he could get a “high” without appearing to be intoxicated to others, especially his father.

Six months later, he was taking mephentermine injections daily, in gradually escalating doses. Procuring it was costing him 2–3 times more than his expenses on opioids. He denied any illegal or criminal activity, but owned up lying and stealing at home. Feigning physical symptoms, he sought money for medical consultations. Failure to procure mephentermine would result in

withdrawal symptoms like lassitude, restlessness, and cold extremities, which would convince his father of the need for medical help. He avoided letting his father accompany him to the medical consultations. Aware of the dependence, he often thought of and occasionally tried to stop mephentermine use (longest attempt lasting 1 month), but failed due to strong craving.

By mid 2011, mephentermine use had become too expensive and prevented his gainful employment. He divulged the problem to his father. A local deaddiction center pleaded ignorance of managing mephentermine dependence. Dejected and fearing for his son's life on abrupt cessation, the father now procured the mephentermine. When they contacted us, he had been using intravenous mephentermine 1500 mg/day in 4–5 divided doses for the preceding 6 months.

Clinical examination revealed multiple needle puncture marks along the veins over both forearms. Cardiovascular examination was normal except for tachycardia (106–110 beats per minute) and hypertension (systolic pressure 150–160 mmHg and diastolic pressure 100–110 mmHg at different times and body positions). Body mass index was 23.30. No other abnormality was detected on systemic examination. Haemogram, liver function tests, and renal function tests were normal. Electrocardiogram was suggestive of sinus tachycardia. There were no signs and symptoms of opioid intoxication or withdrawal; thin layer chromatography of urine tested negative for opioids. Objective evidence of presence of mephentermine in the body could not be obtained due to lack of resources for the same. Both he and his father denied any family and past history of psychotic symptoms. No abnormality was detected on mental status examination. He complained of lassitude and restlessness.

Discussion

Over the decades, reports on mephentermine dependence have increased, providing new data on its tolerance, withdrawal, and complications, but the true extent of the problem remains to be documented. Ours is one of the few reported cases of mephentermine dependence and the first with such a high dose. In previously reported cases, even low doses of mephentermine were shown to induce or worsen psychotic features. However, our case did not develop any psychotic features in spite of regular use of a very high dose; lack of genetic vulnerability to psychosis may be one explanation for this.

Mephentermine misuse may have significant clinical implications because of its association with psychosis and cardiovascular effects like hypertension, arrhythmias and risk of sudden death [4, 10]. There is a lack of awareness of its potential for dependence among not only the public but also the health care professionals, including those dealing with substance abuse. In such a scenario, the seriousness of the situation cannot be overemphasized. Efforts need to be made to disseminate information regarding the abuse potential of mephentermine and its effective management and the need to control its availability. Wider access to the resources for detection of the drug in the body can also help in improving the identification of the problem. Involvement of both policy makers and clinicians is needed to deal with this emerging challenge.

Conflict of Interest

The authors declare no conflict of interest.

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