

CASE REPORT OF SUBSTANCE DEPENDENCE WITH BUPRENORPHINE AND MEPHENTERMINE

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ABSTRACT

Here is reported an unusual case of substance dependence with buprenorphine, mephentermine, & promethazine. This combination taken through intramuscular route produced a relatively mild & delayed abstinence syndrome with features viz. increased sleep and appetite in the patients. The neurophysiological basis for use of this rare form of additive (mephentermine) with buprenorphine is speculated.

Key words : Buprenorphine; mephentermine; dependence; withdrawal symptoms

Opium (afeem) (Aggarwal,1995) a derivative of "Papaver somniferum" and its congeners like heroine, morphine, methadone and buprenorphine are well recognised as drugs for abuse and dependence. According to one estimate 0.2-0.6% of Indian urban population need treatment for opioid dependent use (Malhotra et al.,1997).

Buprenorphine, a semi synthetic opioid and partial Mu (μ) agonist has potential analgesic properties and a moderate abuse potential. It has a mild and prolonged withdrawal syndrome (Aggarwal,1995). It is abused parenterally mainly by ex-heroin addicts (Malhotra et al.,1997).

It has been used for de-addiction of uses of heroin, cocaine or both via parenteral route (Jaffe,1995). Here we report a rare case of substance dependence with buprenorphine, mephentermine and promethazine.

CASE REPORT

Mr. K.K. was admitted to special ward in G.B. Pant Hospital in April,1998 with following complaints. Since four years he had been

injecting 2 ml (0.6mg) buprenorphine, 2 ml (30mg) of mephentermine and 2 ml (50mg) of promethazine. Initially he had started with 1 ml (0.3 mg) injection of buprenorphine in OD or BD dose which had supposedly been prescribed by a local physician as a safer alternative to cap. proxyvon (dextropropoxyphane 65 mg+ acetaminophen 100 mg) to which he had been addicted earlier. He later increased the frequency of injection to about 5-6 per day (1.5-1.8 mg of buprenorphine). Later, the patient developed complaints of giddiness which was diagnosed as hypotension (low B.P.) by a local practioner who gave him one injection of mephentermine (1 ml). After this the patient started adding 1 ml (15 mg) of mephentermine to each ml (0.3mg) of buprenorphine.

In the past 2 months before admission, patient started adding 4 ml (100 mg) promethazine to 1 ml of buprenorphine and 1 ml of mephentermine to make up a single dose. He took his last dose consisting of 2 ml (0.6 mg) of buprenorphine, 2 ml (30 mg) of mephentermine & 2 ml (50 mg) of promethazine on the previous day of his admission to the

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hospital at about 14:30 hrs.

Past History (Family & Personal)-Patient had been abusing opium (about 10 mg/day), alcohol (1-2 pegs/day) since 22 years of age. He met with an accident in 1987 and during subsequent hospitalisation his family members came to know of his drug habits. To leave this habit he started taking cap. proxyvon 1-2/day. He stopped taking alcohol and opium and increased to 5-6 cap. of same drug per day and got addicted. He turned to buprenorphine to leave proxyvon and got hooked.

Patient belonged to an affluent and educated family. He was a graduate and had worked for some time in the family transport business. After becoming addicted to drugs he stopped working. He used to borrow large sum from his friends and relatives. Later he started pawning the household valuables to get money. His family members disowned him when they came to know his drug habit. His wife, fed up of his manipulative and irresponsible behaviour, left him and finally divorced him.

Management & Course in the ward - After a detailed work up, patient was searched thoroughly for possession of any further doses and was placed under strict supervision.

All baseline investigations were normal. Treatment was started with tab clonidine 0.15 mg, tab. tramadol hydrochloride 50-mg & tab. chlorthalidone 50 mg. Tablet clonidine had to be withdrawn on 2nd day due to persistent fall in BP.

Withdrawal symptoms were studied using the substance withdrawal rating proforma (Bradley et al., 1987). Typical withdrawal symptoms like mydriasis, anxiety, restlessness, low BP were felt from 4th day of complete abstinence & became maximum on 6th day. On this day, patient had some 'craving' for this dose, felt very weak and feverish. He also had mydriasis, tremors, anxiety, restlessness & irritability. Curiously, patient's appetite and sleep increased instead of decreasing. Also, yawning, lacrimation, rhinorrhoea, non-specific aches & pains, numbing of hand & feet and feeling of

being cold were noted by the patient. On the 8th day of admission patient left the hospital and took another dose. Subsequently, he was discharged on day 9 on same treatment.

DISCUSSION

Opioids, amphetamines and cocaine have common mechanisms of action on dopaminergic pathway which may account for their synergistic effects. Euphoria & analgesia are produced due to release of dopamine or block of its reuptake by these substances (Jaffe et al., 1997).

Mephentermine after demethylation is converted to amphetamine, which has euphoriant and brain stimulant effect, is a potent drug of for abuse. Its methylation reduces its properties for release and up take of norepinephrine which is responsible for most its actions (King & Ellinwood, 1997). So, mephentermine may share some of properties of amphetamine. It may act as brain stimulant and add to effect of buprenorphine in this case.

Mephentermine, an alpha adrenergic agonist, has action similar to Ephedrine. Its onset of action is prompt (between 10 to 15 minutes) and its effect lasts for many hours. It is given in form of IM, IV injection or infusion in drip with titration of dose according to B.P. response (Goodman & Gillman, 1991). It could be effective in countering the fall in B.P. reported after IV buprenorphine when mixed in same syringe.

Conclusively, to the authors' knowledge there are no reported case of use of mephentermine as agent of abuse or as an additive to other drugs like buprenorphine. This report highlights the use of a rare and interesting combination of buprenorphine, mephentermine and promethazine for parenteral abuse.

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