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## Case Report

# Mephentermine abuse of prescription drugs in gym

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### ABSTRACT

A case report of 32 years old male presented to the drug addiction OPD and treatment center for the withdrawal symptoms of mephentermine. Mephentermine a synthetic derivative of amphetamines with cardiac stimulatory action is been misused for boast of endurance in bodybuilders. Abuse of mephentermine result in psychosis, cardiovascular disorder and development of tolerance and dependence over time. Given its potential of causing harm, the abuse and dependence liability of mephentermine needs to be highlighted to gym instructors and general public.

**Keywords:** Mephentermine, Drug abuse, Dependence, Gymnasium

### INTRODUCTION

Anabolic steroids and synthetic derivatives are used widely and abused by community weight trainers, gyms, and health clubs. Majority of use was by recreational bodybuilders to increase endurance, and consequent steroid abuse due to its easily availability are becoming a challenge.

Mephentermine is a synthetic derivative of amphetamines which shares a strong chemical similarity with methamphetamine resulting in stimulant actions of the alpha and beta adrenoreceptors and acts by inhibiting monoamine oxidases, A and B1 and is used as a vasoconstrictor for treating hypotension in acute, emergency and anesthesia settings or as a nasal decongestant in inhalers to gym instructors and general public.<sup>1</sup> Report of mephentermine misuses or dependence are limited in the last 10 years. It has been prohibited by the World Anti-Doping Agency as well, National Anti-doping Agency (NADA) India, because as a stimulant, it can improve physical performance.<sup>2</sup> It is available in many countries illegally or legally, mainly for veterinary use.<sup>3</sup>

It's available as 10 mg oral tablets and also as intramuscular or intravenous injections of 15-30 mg/ml. the standard parenteral therapeutic dose range is 15-60 mg/d either as an intravenous infusion or injection. The few reports from India describe chronic psychosis with mephentermine dependence.<sup>4</sup>

We present a case of mephentermine dependence who reported using a dose of 60 mg/ml daily for the last 2 years.

### CASE REPORT

A 32 years old male presented to the drug addiction OPD and treatment center of the Institute of Human Behavior and Allied Sciences, Delhi for withdrawal symptoms of mephentermine. Mephentermine was advised by his gym trainer as intravenous (IV) mephentermine to increase his endurance. Following an IV dose administered, he perceived increase energy, endurance, pleasurable sensation, nerve stimulation, and increase boost for exercise. After irregular use (30-60 mg 2-3 times weekly) for 4-5 months, he gradually increased the dose from 30 mg to 60 mg IV daily regularly. On voluntary dose

reduction, he experienced withdrawal features like body ache, numbness, restlessness, cold extremities and intense craving, and lack of interest in routine life which convince him to seek medical help and consultation. Aware of the dependence, he often thought of and occasionally tried to stop mephentermine use (longest attempts 3-4 days) but failed due to strong craving.

Clinical examination revealed evidence of injection abuse in the form of multiple injection site-related skin infection on fore-arm and hips with a history of pus drainage from the injection site. No psychotic symptoms have been seen in patients. Cardiovascular examination was normal except for mild tachycardia (110-116 beats/min) and hypertension (systolic pressure 136-148 mm/hg and diastolic 96-110 mm/hg). No abnormality was detected on other routine blood tests. The electrocardiogram suggested of sinus tachycardia. No other evidence of substance abuse. No positive past and family history of psychotic symptoms.

Our patient has clearly demonstrated ICD-10 substance dependence syndrome by meeting following four out of six criteria, strong desires or sense of compulsion to use the substance, impaired control, withdrawal, and persistence despite harm while intoxication and psychosis were absent.<sup>5</sup>

Patient was admitted and tab lorazepam 2 mg, tab trihexyphenidil 2 mg once daily was started and behavioral therapy under observation in the IPD for 2 weeks. Typical withdrawal symptoms were maximum on day 5-6. After 15 days patient started feeling better and was discharged at a satisfactory note.

## DISCUSSION

Over the years, reports on mephentermine dependence have increased, in bodybuilders as they have been suffering from an altered perception of the body leading to psychopathology.<sup>6</sup> Unrealistic, muscular male and body ideals with easy availability of drugs, is associated with drug abuse and other social issues, , however, true extent of the problem is not known. The misuse of mephentermine can bring about major clinical implications, which may include psychosis, secondary hypertension, and cardiovascular diseases such as arrhythmias and sudden death syndrome. Ours is one of the few reported cases of mephentermine dependence without psychosis. The two earlier reports were without evidence of dependence and is not known. Short-lasting acute paranoid-hallucination.<sup>7,8</sup> A case reported was with combination with buprenorphine and promethazine, while the another fifth case reported a documented dose of 1500 mg/d a very high dose without any adverse effects on cardiovascular system, it could be due to tolerance development.<sup>9</sup>

There is a lack of awareness of its potential for dependence among not only the public but healthcare professionals including those dealing with substance abuse. The seriousness of such an issue cannot be overemphasized and efforts need to be made to disseminate information regarding the abuse potential of mephentermine and its effective management and need to control its availability. The involvement of drug policymakers and clinicians is needed to deal with this emerging challenge is required.

## CONCLUSION

This case report shows that, handful reports, can only be the tip of iceberg in mephentermine abuse and dependence in gym with multiple substance use, even without precipitating or occurring in the context of an amphetamine-like psychotic illness. Given its potential of causing harm, the abuse and dependence liability of mephentermine needs to be highlighted.

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