

Case Report

Ketamine Dependence in an Anesthesiologist: An Occupational Hazard?

Shrigopal Goyal, Atul Ambekar, Rajat Ray

ABSTRACT

Substance abuse among medical professionals is a cause for concern. Certain psychotropic substances such as ketamine are at easy dispense to anesthesiologists increasing the likelihood of misuse and dependence and raise several issues including safety of patients. We discuss a case demonstrating ketamine dependence in an anesthesiologist from India. The reported psychotropic effects of ketamine ranged from dissociation and depersonalization to psychotic experiences. There was also development of significant tolerance to ketamine without prominent physical withdrawal symptoms and cyclical use of very high doses was observed. Issues related to management of health professionals are also discussed.

Key words: *Anesthesiologist, ketamine, medical professionals*

INTRODUCTION

The substance use among anesthesiologist is a cause for concern. Apart from the usual causes of drug abuse among individuals, i.e., biological, psychological and social causes, reasons such as the proximity to highly addictive drugs and ease of drug availability pooled with working in a high-stress environment persuades an anesthesiologist toward drug use.^[1] Not only drug abuse among these professionals hampers their own life, but also endangers patients' lives. A survey among health professionals reported incidence of drug use among anesthesia personnel to be 1.0% among faculty member and 1.6% among residents.^[2] The most common substances abused by anesthesiologists are opioids such as fentanyl and sufentanil.^[3] The short half-life and

pharmacokinetic properties of ketamine are grounds for it to be potential drug of choice among anesthesiologists seeking to abuse a drug while minimizing the chance of being caught.^[4] There are some case reports of ketamine dependence along with other substances of abuse in the literature.^[5-7] However, few have mentioned ketamine dependence among anesthesiologist.^[4] One such case of ketamine dependence for recreational use has been reported from India.^[5]

CASE REPORT

The present case is about Mr. A, a 30-year-old unmarried male from middle socio-economic status working as an anesthesiologist at a tertiary care hospital presented with the complaints of nicotine use for 12 year, occasional alcohol use for 12 years, Alprazolam use for 11 years and use of injection pentazocine followed by injection ketamine for 3 years. The patient initiated nicotine use at 18 years of age escalating to 15 cigarettes/day within 2-3 months of onset and became dependent on nicotine. At the age of 19 years, he reported initiating alprazolam use due to sleep disturbances during exams but later continued its use on regular basis. During his postgraduate residency period

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Department of Psychiatry, National Drug Dependence Treatment Centre, All India Institute of Medical Sciences, New Delhi, India

Address for correspondence: Dr. Shrigopal Goyal
Department of Psychiatry, National Drug Dependence Treatment Centre, Room No. 4096, Teaching Block, All India Institute of Medical Sciences, New Delhi, India. E-mail: shrigopalgoyal@gmail.com

in anesthesia, he started using injectable midazolam 5 mg intramuscular (IM) as it was more easily available than alprazolam. After use of midazolam on few occasions he did not experience a good sleep and so he injected pentazocine with promethazine IM which was also readily available with him in his personal kitbag. His use of pentazocine gradually increased to 15 injection/day regularly within 3-4 months of initiation. During the last year of residency, on 1 day, he was feeling difficulty in sleep; however, he was not having any other medication or injection other than ketamine in his room. He injected 1 ampoule (2 ml) of ketamine (1 ml = 50 mg ketamine) IM himself. He felt a unique experience with ketamine which was different from all substances he had used in the past. He felt light, euphoric, had pleasant visual hallucinations of animals and also felt as if his limbs had separated and he was floating in the sky, other sensations of depersonalization. Though these effects persisted for about 30 min, he felt as if time around him had stood still and he had been in the state for hours together. He started using 1-2 ampoules of ketamine daily in night time to avoid impairment in duty. Gradually, He had decreased use of other drugs such as pentazocine and ketamine became main drug of abuse. He used it in similar pattern until he completed post-graduation. He would procure vials of ketamine from the hospital supply or from prescription of patients. Thereafter, he joined as specialist at tertiary care hospital. Since then, he started using ketamine in cyclical pattern. He would use 5 ml of ketamine daily increasing it gradually up to 50 ml/day over next 10 days, then give gap for 1-2 week and again repeat the cycle. During this period of ketamine use, he would not be able to control his use and would take leave from work. Subsequently, he would join duty and would try to remain abstinent for next few days but would relapse again due to craving on ketamine. In next few months, his period of abstinence gradually decreased. He started using ketamine (10-20 ml) on daily basis and took care that the peak effects didn't coincide with his duty hours. There was a gradual decline in his work performance as well as social interactions. Over few months, he developed fibrosis on gluteal and deltoid region due to repeated injection use and ulcers over lower limbs but would treat himself. He would remain abstinent 2-3 times for a period ranging 1-2 months due to these physical complications. Around 2 years of ketamine use, he was detected by superiors under intoxication during duty hours and advised to seek treatment from deaddiction center. However, initially he displayed reluctance to seek help and would reassure family member that he will quit drug by himself. Subsequently, he was admitted in our center on repeated persuasion from family member after 2 month of detection by seniors. Assessment and treatment started after admission but could not

be completed as he took premature discharge due to poor motivation within 2 days of admission against the treatment team advice. Patient was readmitted after 3 month on repeated persuasion of family members and his colleagues. In second admission, after detailed assessment, management started including motivational interviewing and craving management was started during ward stay to prevent premature discharge. Patient also reported psychological symptoms such as dysphoria, sleep disturbance, irritability. Surgical consultation was sought for bilateral lower limb edema, ulcer and fibrosis of gluteal region and managed as advised by consultant surgery. After discussion with patient and their family members, plan was made to start naltrexone for long-term treatment and changing occupation to hospital administration. During initial part of treatment, he would not follow advice properly given by treating team rather he would try to self-medicate and would argue with treating team of ward. He started become more cooperative after 1 week of ward stay. There had been significant reduction in craving on visual analog scale and improvement in physical and psychological symptoms within 2 week. Relapse prevention session was taken regularly during ward stay. He came regularly for follow-up in out-patient department after discharge and maintained abstinence over next 3 months but later he stopped follow-up.

DISCUSSION

This case display ketamine dependence in a qualified medical professional. Patient demonstrated features, such as careful dose adjustment to minimally affect working ability, trying to self-quit without expert help, cue-related craving causing relapse and accidental identification.^[4] Physician substance abuse defines two types of users: Recreational users and physicians self-medicating to cope up with stressful environment.^[8,9] In our case, he can be included in both categories. He initiated drug use due to stressful environment but it persists due to craving. Although, he initiated with tab alprazolam use but later graduated to ketamine due to its pleasurable effects. Being anesthesiologist, he was aware of pharmacokinetics property and doses of ketamine and hence initially he was confident that he would not be addicted to ketamine or harm his patients but subsequently become dependent on this drug.

Several unique clinical issues are presented while handling such colleagues. There may be tremendous amount of denial and resistance on part of the health professional. Seeking treatment may be seen as a failure of one's own professional expertise and hence, an initial effort is made for self-treatment. A threat to one's professional reputation and career may also contribute to such behavior. Physicians may have

difficulty accepting the role of a patient and may be that is why the famous adage of good doctors being terrible patients. There may be boundary issues and violations while dealing with such physician-patients. It may at times pose a great challenge to the treating psychiatrist to have a colleague as a patient who may seek more autonomy and independence. Confidentiality is all the more important and the professional may fear loss of accreditation, affiliation and practice. Ironically, all these factors may lead to a decreased access to medical care despite being at the core hub of health care.

Another important clinical issue is that the goal setting for a professional cannot be anything less than complete abstinence to ensure optimal functioning. Treatment options like harm reduction and controlled substance intake are not good choices and may not be offered. Another interesting view point is the issue of occupational exposure and occupational hazard. Anesthetist, who are in the vicinity of potent drugs like ketamine on long term basis are at a higher risk of future development of addiction of such drugs and have more chances of recurrent relapses due to craving induced by repeated exposure of drugs. However, biological vulnerability of individual, psychological and social factors have important role in addiction of such drugs.

This is first case report of ketamine dependence in an anesthesiologist from India. This case attempts to highlight that medical professionals, who are in vicinity of such drugs may be having more chances of developing addiction and may pose management difficulty to

treating psychiatrist. However, few case reports will not sufficient to draw conclusion and a systematic study is needed among health professionals to document and envisage plans to manage such cases.

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