

Hallucination with Tapering Dose of Buprenorphine

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ABSTRACT

Opioid dependence is one of the most common types of drug dependence in India which requires pharmacological intervention. Buprenorphine is one of the commonly prescribed drugs in Opioid Substitution Therapy (OST). Few reported cases of buprenorphine induced hallucination but none published cases of hallucination with tapering dose of buprenorphine.

This is a unique case of hypnagogic hallucination induced during the initial tapering dose of buprenorphine in a patient of opioid dependence. A 20-year-old boy came for de-addiction therapy with history of opioid use from 4 years, used to have withdrawal symptoms in form of lacrimation, body aches and yawning. All relevant blood investigations were done which were within normal limits; drug urine screening was positive for opioid. MRI head showed normal study. Patient was started with OST (buprenorphine) and showed improvement but on tapering the initial dose, patient started having hallucinations which continued for 2-3 days until started with olanzapine.

Keywords: Hypnagogic hallucination, Opioid, Opioid substitution therapy

CASE REPORT

A 20-year-old boy, pursuing electrical engineering, presented to psychiatry OPD in MMIMSR, Mullana with 4 years long history of opioid intake in the form of heroine. Gradually, in next two years the dose of substance increased to 3-4 gm of heroin per day. Initially, he used to sniff the substance putting it on foil paper but later on he shifted to intravenous route for drug intake. Sometimes due to unavailability of the drug he reported body ache, excessive yawning, loose stools and lacrimation. Consent was taken from the patients for publishing the case.

The patient reported serious financial and relationship issues because of opioid dependence. There was no history of any other substance abuse and any comorbid psychiatric illness. No history of psychosis was reported. No family history of any psychiatric illness was there. He was on therapy under a local psychiatrist but left it after two months. So, the family brought the patient to the present institute for de-addiction.

On mental status examination, patient was conscious and co-operative. Tattoos and needle marks were seen on both the arms. Laboratory blood tests (CBC, LFT, RFT) were within the normal range except drug urine screening test was positive for opioid. MRI of head showed no abnormality. In ward patient was started with 6 mg buprenorphine per day in three divided doses and 800 mg flupritine per day to deal with the withdrawal symptoms of opioid. Patient responded well with treatment as no withdrawal symptoms were noted. On 4th day when afternoon dose of buprenorphine was reduced from 2 mg to 1.2 mg (as scheduled) other drugs continued as usual, patient complained of auditory hallucinations in clear consciousness on the same night. The patient slept for 2 hours following i.v haloperidol, the injection was repeated again after 2 hours.

Next day atypical antipsychotics (olanzapine) 2.5 mg HS was started. However, auditory hallucinations continued for day and night for next 2 days. Patient showed gradual improvement with an increase in dosage of olanzapine (5 mg).

The symptoms started showing improvement in his behaviour and fearfulness associated with hallucinations following 4 days after the first dose of olanzapine. For the next 10 days, patient continued with 4 mg of buprenorphine, flupritine 800 mg and 2.5 mg olanzapine. At

the time of discharge the doses of buprenorphine and olanzapine were tapered to 4 mg and 2.5 mg per day, respectively. The patient was doing well with medications and is on follow-up till date.

DISCUSSION

Buprenorphine is one of the commonly prescribed drugs in opioid dependence for more than two decades now. Worldwide, there are approximately 34 million opioid and 19 million opiate users [1]. In India as per National household survey of 2004, there were 2 million opioid users and 0.5 million cases of opioid dependence [2]. Judging this global rise, it may be speculated that large number of Indian people requires treatment for opioid dependence. As per FDA, there are CNS effects with buprenorphine like insomnia, dizziness, anxiety, depression, insomnia, etc., but not hallucination [3]. The best treatment option for opioid dependence is opioid agonist maintenance therapy also known as OST. Methadone and buprenorphine are the most commonly prescribed opioids in OST. In India, buprenorphine has been used in OST for more than two decades. Unlike the already published few cases of hallucination induced by buprenorphine [4-6], we present a case of hallucination in a patient of opioid dependence induced during initial tapering of buprenorphine.

Most recent case report describes a patient receiving OST (sublingual buprenorphine and naloxone treatment) for opioid addiction complaining of tactile hallucination [4].

A case report published in BMJ describes a case of a patient who took sublingual buprenorphine (200 mg as single dose) for management of postoperative pain after haemorrhoidectomy, reported experiencing auditory hallucination [5]. This patient did not have any history of mental illness. Also, there was no family history of mental illness. Auditory hallucination stopped on discontinuation of the drug.

Another case series published in BMJ also describes precipitation of hallucination in five patients following epidural buprenorphine administration for management of postoperative pain [6]. These patients did not have any history of psychiatric illness and on stoppage of the drug the symptoms disappeared.

Although, we could not find any reported case on hallucination due to tapering doses of buprenorphine. However, in majority

of such literature hallucination occurred with high dose of opioid (either planned or accidental) especially in terminal stages of cancer patients. Besides morphine (the most commonly reported opioid for hallucination), other agents like fentanyl, tramadol, hydromorphone, buprenorphine, pentazocine etc., are also known to cause hallucination [7-9].

One interesting fact is that in all the reported cases, high doses of opioid substances are associated with hallucination, but in index case hallucination was precipitated by tapering the dose of buprenorphine. Although, there is no specific explanation of buprenorphine associated hallucination. However, many hypotheses have been put forward in order to explain the aetiology of hallucination induced by opioid [7]. Dopamine dysregulation is considered as one of important hypotheses. Overactivity of dopaminergic pathway (especially the mesolimbic system) is mainly implicated in auditory and visual hallucination. Opioid metabolites with similar properties as the parent compound can precipitate or aggravate hallucination. As buprenorphine metabolites like N- desalkyl buprenorphine and buprenorphine-3-O-glucuronide can enhance buprenorphine induced neurotoxicity [8].

Also, another point to be noted is that in all the previously published cases of buprenorphine induced hallucination, the drug had to be stopped for the hallucination to disappear; however, in index patient, following intake of haloperidol and olanzapine within 3 days hallucination disappeared and the dose of buprenorphine was further tapered without any complain of hallucination.

CONCLUSION(S)

Thus, by reporting this case we would like to draw the attention of the doctors to the less common but not less distressing side-effect associated with tapering doses of buprenorphine that is, hallucination.

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