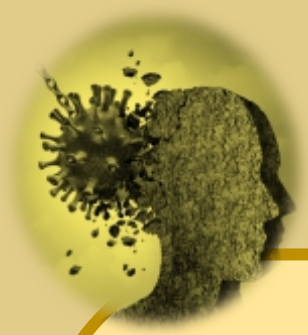

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CASE REPORT

Cannabis Induced Psychotic Disorder in Cannabis Withdrawal During COVID-19 Lockdown : A Case Report

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ABSTRACT

In the light of genetic predisposition, cannabis may act as a trigger for psychosis in a predisposed individual who otherwise do not develop psychotic symptoms if he/she abstains from the substance. Usually, cannabis-induced psychosis occurs during heavy use and during intoxication. There are only a few reported cases when psychotic symptoms occurred during cannabis withdrawal state. We report a 20-year-old man who had a brief episode of psychosis upon cannabis withdrawal due to the circumstance arising in the aftermath of COVID-19 lockdown following the regular heavy pattern.

Keywords: Cannabis induced psychotic disorder, COVID-19, lockdown, adult

INTRODUCTION

Cannabis is one of the most widely cultivated, trafficked and abused illicit drugs in the world. [1] The generic term cannabis is used to indicate the several psychoactive preparations of the plant *Cannabis sativa* with Delta-9-tetrahydrocannabinol (THC) as the major psychoactive ingredient. Smoking cannabis is taken as a pleasant and non-threatening experience for most people as opposed to the people who experience adverse reaction, feeling opposite to that. The feeling of high, pleasure and mystical experience by the user not only depends upon the potency of cannabis, the route of intake, smoking technique and dose but also upon the individual's personality and the current emotional state before the drug use and previous drug experience. The features/ adverse reaction of substance induced psychosis associated with smoking of cannabis may include: anxiety, fear, tachycardia, dyspnea, crying, suspiciousness, paranoid ideas, dissociation, derealization, delusion and auditory hallucination [2,3]. Cases of induced psychosis are somewhat reported from the countries where there is long-term access to cannabis of high potency and the episodes of psychosis are referred to as 'hemp insanity'[2]. *Cannabis withdrawal symptoms such as anxiety, irritability, tremor of an outstretched hand, sweating and muscle aches usually begin 10 minutes to 48 hours after its last use and these are brief lasting from several hours up to seven days.* [4,5] *There have been limited cases of psychosis reported in relation to cannabis withdrawal and studies are lacking to show the relationship between cannabis withdrawal and the onset of psychosis* [6].

The government of Nepal decided to impose the lockdown from March 24, 2020, after the slow initial rise of COVID-19 cases [7]. We report a case of excessive use of local Cannabis in an adult male during lockdown due to COVID-19 who later developed the cannabis-induced psychotic disorder upon its withdrawal on account of decreased availability of local cannabis following COVID-19 lockdown.

CASE PRESENTATION

A 20-year-old unmarried Hindu male, from low middle

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socioeconomic status, studied up to secondary education, working as a bus conductor; with a history of unspecified psychosis (self-muttering behavior, suspiciousness and delusion of persecution) in his uncle; with well-adjusted premorbid personality; was brought by his brother to our hospital because of his abnormal behavior at home. As per information collected from his peer circle, he had history of on-off use of Pregastar (Pregabalin 75mg), Decolic Tablet [(Diazepam 2mg) + (Dicyclomine 20mg)] and Spasmo-Proxyvon plus [(Dicyclomine (10mg) + Paracetamol/Acetaminophen (325mg) + Tramadol (50mg)]. A pattern of the use was all the drugs taken 2-3 tablets/day if available, for 4 years. He occasionally used to drink locally distilled alcohol with his friend circle for recreational purposes. He had a history of tobacco use in the form of smoking and Ganja (cannabis) use for the last 4 and 3 years respectively. He had been regularly using tobacco in the form of smoking cigarette 5-10 sticks/day; with intense craving and feeling restless, irritable and difficulty in sleeping if he didn't smoke. For the last two months, he had increased smoking to 15 sticks per day and could not resort back to previous years.

Prior to the lockdown, for last three years, he used to take marijuana/Ganja in the form of smoking joints, shared among friends 2-3 times per day in 2-3 days gap and 8-9 times during weekends. For the last 3 months, after the lockdown started in March 24, 2020, the patient had been staying at his uncle's home, frequently going out of the house and meeting his friends. He had been using locally available marijuana in larger amounts in the form of a water gun bong and sticks sharing among the friends. He expressed that he was high (euphoria) most of the time and felt less worried about contracting the virus during the sharing of cannabis. The patient felt that his thoughts were sometimes moving quickly and time was passing very slowly as if he was traveling in another parallel universe. In between, he would also use spasmo-proxyplus and pregabalin which increased to 5-6 tablets orally due to unavailability of the other drugs. As per the patient, the additive effect of the drug would make him feel less anxious and more craving for cannabis. Due to the Nepal-India border close down, the oral drug was not available for the last 1 month, but, there was an adequate local supply of marijuana to the patient by his peer circle. So, he continued smoking the marijuana. He would feel restless, headache, pain in the abdomen, decrease in appetite and difficulty sleeping; and these symptoms would go away after smoking cannabis. He would spend most of the time acquiring cannabis and would feel satisfied only after consuming cannabis in greater amount. As the government imposed more restrictions on movement amid the slow initial rising cases of COVID-19 and stock of cannabis went down, the patient had decreased the amount of marijuana use for the last 5 days before the presentation to the emergency department (E.D.).

After decreasing the use of marijuana, he started appearing irritable, anxious and complaining of headache and decrease in appetite. He started closing the door and staying alone most of the time, moving here and there in his room. He used to express that his activities were being monitored and the camera was kept all around his room. He would frequently run away from the house, expressing that some magic might cast upon him. He had to be locked up at home for 2 days by family members. He was taken by his family members to the local traditional faith healer where appearing irritable, he expressed that he would kill the faith healer with a weapon. His last cannabis use was 3 days prior to the presentation when he was found self-muttering, appearing irritable and suspicious. He would sleep only for 3-4 hours and appear energetic in the morning. There was no abnormal finding on neurological examination. Mental state examination showed anxious, irritable affect, abnormalities in thought content as delusion of reference (being monitored) and delusion of persecution (intruders planning to kill him). Sensorium was intact, judgment was impaired and insight about the illness was absent. As the patient was difficult to control at home, amid lockdown, patient was brought to our emergency department and admitted to the psychiatric ward on July 21, 2020 with a provisional diagnosis based on the ICD-10, 'Cannabis dependence with Cannabis induced psychotic disorder, Tobacco Dependence Syndrome, Opioid, Benzodiazepine and Alcohol use'. Differential diagnosis was: Acute and transient psychotic disorder. The patient was tranquilized with haloperidol 10mg and promethazine 50mg injection. A baseline investigation was sent from the E.D. Blood investigation parameters were within normal limits. Neuroimaging was suggested but later deferred due to the patient's financial condition. The patient was kept on olanzapine 7.5mg/day and lorazepam 4mg/day. The patient reached to premorbid level within 36 hours after admission. There was no referential or paranoid ideation. The patient accepted that these delusions of being monitored and intruders planning to kill him had not been

real and acknowledged these symptoms were due to substance use. Eventually, the drug was tapered off in 4 days and the patient was discharged 7 days post-admission after psychoeducation and motivational interviewing to quit substance. He was abstinent from cannabis and was doing fine in 6 months follow-up.

DISCUSSION

Seen with SARS and now with COVID-19, one of the coping strategies used by an individual to disengage from a stressor is the use of the substance.[8,9] Our patient was also busy obtaining and consuming cannabis; he had used this negative coping strategy to overcome the fear of pandemic. Our patient was using Ganja in the form of smoking joints and bong (water gun) which is obtained from the smaller upper leaves and flowering tops of the female plants. There were features of craving, spending his free time in searching and obtaining cannabis and features of withdrawal (such as: restlessness, headache, abdominal pain, insomnia, decreased appetite) and relief after consuming cannabis in the last three months which fulfills the criteria for dependence as per the ICD-10 for cannabis [5]. A study by D'Souza et.al. showed that the use of cannabis in healthy individuals may produce a wide range of transient psychiatric symptoms including schizophrenia-like positive, negative, and cognitive symptoms, alteration of perception, euphoria and anxiety [10]. A diagnosis of substance-induced psychotic disorder was made as there are: (a) onset of psychotic symptoms during or within two weeks of substance use; (b) persistence of the psychotic symptoms for more than 48 hours; (c) duration of the disorder not exceeding six months. It shouldn't be a manifestation of a drug withdrawal state with delirium [5]. Our patient experienced predominantly schizophrenia-like symptoms: the delusion of persecution and delusion of reference with some mood pictures like irritability, decreased need for sleep, increased energy following decreasing the use of cannabis. This pattern of decreased use suggests that the delusion and mood symptoms were linked to this period of cannabis use [11]. Our case had a family history of psychosis in a second-degree relative (uncle) making him genetically vulnerable. In this case; there was a clear temporal relationship of psychotic episode with marijuana use. First, the symptoms developed in the background of prolonged marijuana use and the symptoms appeared after decreasing the amount of marijuana use (during withdrawal state) due to shortage of the supply during lockdown period. Second, the patient's symptoms resolved completely within 5 days of abstinence of the marijuana and there were no residual psychotic/ mood symptoms noticed after improvement during hospital stay. And, the sensorium was intact in our patient which rules out cannabis withdrawal state with delirium.

The following table can help differentiate between primary psychosis and cannabis-induced psychotic disorder (CIPD). [2,5,12] (Table.1)

Table 1 : Comparison of Cannabis induced psychosis and indipendent psuchosis

Cannabis induced	Independent psychosis
Symptoms appear during or immediately after cannabis use (a substance known to cause)	Symptoms usually appear before substance use
Symptoms resolve after cannabis abstinence	Symptoms persist despite discontinuation of use
Psychotic symptoms fleeting in nature	Symptoms are frank and persistent
Urine toxicology- usually positive	Positive in comorbid cases
Insight about the symptoms and illness- partially present	Insight about the symptoms and illness- partial or usually absent
Trial of antipsychotics may/ may not improve the symptoms	Trial of antipsychotics markedly improves the symptoms

There has been criticism regarding the existence of CIPD as these symptoms are regarded as a sign of underlying psychopathology and difficult to differentiate from schizophrenia. Long term follow-up data regarding existence of cannabis psychosis is lacking and the study regarding same is also inconclusive whether cannabis aggravates or precipitates psychosis in genetically vulnerable individuals. However, critics believe that the use of cannabis can produce psychosis and it is usually short-lived; with complete remission [13]. Sometimes, accurate histories may not be obtainable but a treating physician should be alerted of the possibility of cannabis-induced psychosis during withdrawal in cases resembling acute psychosis-like symptoms. Usually, patients with CIPD are treated on an outpatient basis and those who are admitted also have short hospital stays. Long-term follow-up of such patients is also essential prognostically. The diagnosis of CIPD is entertained not only during acute intoxication but also upon withdrawal which will ensure the timely and appropriate management of the disorder. In the Current COVID-19 pandemic context, substance-related disorders like this might present to the psychiatric service [14].

CONCLUSION

Our case report highlights the fact that cannabis use can trigger psychosis in genetically predisposed healthy individuals even during the withdrawal period with no prior history of mental illness. Careful history and examination are essential to rule out psychotic disorder as the overdiagnosis will lead to overtreatment with antipsychotics and mood stabilizers in such cases. Abstinence from cannabis and long-term follow-up for early intervention if independent disorder occurs in the presence or absence of cannabis is important from a management perspective. The current COVID-19 pandemic might pose various local contextual dynamics in the course of substance use disorders including cannabis.

KEY CLINICAL MESSAGE

We present a case of cannabis dependence, with genetic loading in his second-degree relative, who presented with the psychosis while decreasing the amount of consumption of the cannabis due to unavailability of local cannabis during lockdown following the heavier use and the resolution of the psychotic symptoms when he abstained from the substance for five days.

LIST OF ABBREVIATIONS

CIPD : Cannabis Induced Psychotic Disorder
ICD : International Classification of Disease
WHO : World Health Organization

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