

Cannabis-induced psychosis masquerading schizophrenia or vice-versa? A diagnostic dilemma

ABSTRACT

Rachit Sharma,
Ayushma Shah¹

Department of
Psychiatry, Command
Hospital, ¹Department of
Psychiatry, Armed Forces
Medical College, Pune,
Maharashtra, India

Address for correspondence:

Dr. Ayushma Shah,
Armed Forces Medical College,
Pune, Maharashtra, India.
E-mail: ayushmah@gmail.com

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Clinical features of schizophrenia and cannabis-induced psychosis (CIP) share many overlapping characteristics. We present a case of Cannabis Dependence Syndrome, whose first presentation was with first-rank symptoms of schizophrenia in the form of thought insertion, withdrawal and delusion of control.

Keywords: Cannabis, psychosis, Schizophrenia

Longitudinal studies have reported that cannabis use is a risk factor for the later development of schizophrenia^[1,2] Schizophrenia and cannabis-induced psychosis share many overlapping characteristics, though the latter may show more mood symptoms.^[3] We present a young adult in whom Hill's criteria for causation favored CIP, but the symptom profile was suggestive of schizophrenia.

CASE REPORT

A 21-year-old male, an Engineering student, average in studies, with no family history of psychiatric illness, used to smoke Ganja (2–3 joints per day) since 2017, in gradually increasing amounts. In February 2018, he was not able to concentrate on his studies as earlier; also there was deterioration in his class performance. He developed sudden onset, gradually progressive suspiciousness that he is deliberately being targeted

by people around him as he has the potential to become a great physicist. He started believing that some of his classmates are in collusion with unknown engineers and are trying to interfere with his studies using some *dubbed-dormio device* by which anyone's thought can be interfered with and can be read. By April 2018, his suspiciousness became firm and fixed that his thoughts are being interfered with by his persecutors and everyone around him is aware of whatever he was thinking and planning. During this period, he would not be able to move his right hand for hours together, believing that his persecutors had hacked his brain waves and thus paralyzed his hand. His family members took him to some traditional faith healer till July 2018, following which he had a gradual but complete recovery. From July 2018 to July 2019, he was occasionally consuming Ganja and was

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asymptomatic. From August 2019, he resorted back to 4–6 joints per day. In March 2020, he had relapse of symptoms in the form of sudden onset thought alienation, delusion of persecution, delusion of control with impaired judgment and insight. He was treated as an inpatient with tablet risperidone 3 mg and injection risperidone 50 mg fortnightly with which his symptoms resolved completely by August 2020. He stopped medications on his own in October 2020. Thereafter, he again resorted to his previous pattern of cannabis consumption, consuming 5–7 joints of Ganja per day. In January–February 2021, he developed sudden onset firm-fixed belief that his persecutors are using sound waves to interfere with his brain waves and extracting data out of his brain. He was convinced that they are doing it more in the night so as to hamper his sleep and to make him mad. He also believed that COVID pandemic is a big scam and instead of virus it is his persecutors only who have now started targeting other people also, making them seriously ill. He even filed a complaint to Cyber Crime Bureau on February 16, 2021. With these complaints, he was brought to OPD on February 10, 2021.

Physical examination was normal. Mental state examination revealed an ill-kempt individual with scanning looks. He had a fearful affect with restricted range and reactivity, congruent with his thought process. He had delusion of persecution and control. There were no disorders of form of thought, hallucinations, or illusions. He had a poor insight into his illness and had initial insomnia. Positive and Negative Syndrome Scale revealed P26N07G40. His hematological, biochemical parameters and magnetic resonance imaging brain were within normal limits. His urine drug screen test was positive for tetrahydrocannabinol.

A diagnosis of schizophrenia was considered, but in view of temporality, coherence of evidence, specificity of association, consistency of findings, biological plausibility, and dose-response relationship CIP could not be ruled out completely. He was treated with long-acting injectable, injection paliperidone 150 mg under cover of tablet risperidone 4 mg and short course of benzodiazepines. His symptoms resolved partially in the next 6 weeks. At present, he is in acute phase management on outpatient basis.

DISCUSSION

Regarding the symptomatology of schizophrenia and CIP and genesis of psychotic symptoms in CIP, there are two prevailing views. According to the first

viewpoint, cannabis is considered an environmental risk factor that increases the odds of psychotic episodes by increasing the synthesis and release of dopamine as well as blocking dopamine reuptake thereby producing a hyperdopaminergic state. One 8-year cohort study reported that 46% of the patients with cannabis-induced psychosis had cumulative risk of conversion to a schizophrenia spectrum diagnosis.^[4] Another cohort study found that in cases of CIP 15.5-year cumulative hazard rate was 17.3% for a diagnosis of schizophrenia. The mean time to transition to a diagnosis of schizophrenia was 13 years, although over 50% did so within 2 years and over 80% of cases presented within 5 years of CIP diagnosis.^[5] The second view is consequent to long-term evaluation of dopaminergic function in patients who have experienced CIP. Studies have found that long-term cannabis users had reduced dopamine synthesis indicating inverse relationship between long-term cannabis use and dopamine synthesis in the striatum.^[6] In a nutshell, existing evidence indicates that the individuals with CIP who progress to schizophrenia have the same genetic vulnerability as those with schizophrenia. Risk factors include male gender, younger age, and longer first admission. Additional risk factor in our case was the duration of the untreated first episode.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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