A case study of LSD induced late psychosis in a 19-year-old woman

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ABSTRACT
This manuscript reports a case study about a young woman who developed psychotic and manic symptoms after first time lysergic acid diethylamide use.

KEYWORDS: Lysergic acid diethylamide, LSD, Psychosis

INTRODUCTION

Lysergic acid diethylamide (LSD) is a psychedelic drug abused for its mind-altering properties. It can induce changes in mood, thought process, content, insight, judgment, and sensory perceptions, which vary depending on the individual, environment, dosage and other factors. LSD affects a large number of receptors, including all dopamine and adrenoreceptor subtypes. The psychedelic effects of LSD are attributed to its strong partial agonist effects at 5-HT2A receptors. Its exact mechanism of action is unknown; it is hypothesized to work by reducing the inhibitory influence of the striatum on the thalamus, and thus allows overstimulation of the cortex. There have been several reports on LSD inducing psychosis and mood instability.

We report a case of a young woman who developed psychotic and manic symptoms after first time LSD use.

CASE REPORT

A 19-year-old female with no past psychiatric diagnosis was brought to the hospital by her father with concerns of bizarre behavior after LSD use. She reportedly consumed an unknown quantity of LSD for the first time at a party 4 days prior to admission. She was fixated on "Girls, boys, sex and molestation" and stated that she was in the hospital to "see her family". Her odd behavior began a day after LSD ingestion.

On examination, she maintained an intense stare, had an animated, labile affect, and disorganized thought process along with delusions of persecution and auditory hallucinations. Labs were normal except for a urine drug screen positive for cannabinoids. At her baseline, she was a high functioning student currently in college.

She was hospitalized and started on risperidone 1 mg twice daily that was later increased to 3mg per day. She had some disinhibited behaviors in the hospital. She developed a dystonic reaction that resolved with diphenhydramine, but her psychosis did not improve. Risperidone was discontinued and olanzapine was added, which she tolerated and showed improvement.

The patient had history of mature cystic teratoma removal 3 years ago. Due to the atypical presentation and the risk of anti-NMDA receptor encephalitis, even years after the removal of the teratoma, a workup was done. This was negative for Anti-NMDA receptor autoantibodies, ANA, RNP, SM, PM-1, SSA/SSB, SCL-70, and ds DNA antibodies. She was discharged after 10 days of hospitalization with complete resolution of presenting symptoms.

DISCUSSION

There are limited studies on the causes, risk factors, pharmacokinetics and dynamics of LSD and related illnesses. There is some literature, primarily reported in the 1960s and 1970s, about LSD induced schizophrenia and similar psychotic disorders on the schizophrenia spectrum. Although there are reports of suicide and murder under LSD intoxication, the atypical onset and differential diagnosis makes our case unique. Vardy et al. reported a higher incidence of LSD psychosis with parental alcoholism, which is consistent with our patient. Furthermore, our experience adds support for the use of olanzapine as treatment for LSD psychosis, which has been discussed in reports of psychosis in chronic LSD users.

Data from National Survey on Drug Use and Health and Monitoring The Future showed declining trends in LSD use with the reduction in its availability and the emergence of psychoactive drugs like MDMA. The survey also showed a decrease in the perceived risk of using LSD among youth, which predisposes a risk for reemergence. It continues to be a “club drug” as in our patient who ingested it at a party.
LSD-induced late psychosis is a serious complication of LSD use and literature on the topic is outdated, so further investigation and education in the cause and the course of the disease is warranted to prevent a resurgence of use among naïve youth in the future.

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Conflict of interest statement
The author has declared that no competing or conflict of interests exist.

Authors’ contributions
GS conceived, designed, conducted the study and wrote the manuscript. NC, EA, KM, GG assisted in reviewing and editing the manuscript.

REFERENCES